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ILLUSTRATED ALBUM
OF
ALAMEDA COUNTY, CALIFORNIA

ITS
Early History and Progress—Agriculture, Viticulture
and Horticulture—Educational, Manufacturing
and Railroad Advantages—Oakland and
Environs—Interior Townships
—Statistics, Etc., Etc.



COMPILED BY
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ILLUSTRATED BY
E. S. MOORE, Oakland, Cal.



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TABLE OF CONTENTS.

	PAGE.		PAGE.
Chapter I—Early History and Progress	3	Chapter VII—Oakland and Its Environs.....	42
Chapter II—Horticulture, Viticulture, Agriculture.....	12	Chapter VIII—Alameda City and Township.....	52
Chapter III—Educational Advantages.....	16	Chapter IX—Eden Township.....	54
Chapter IV—Manufacturing Industries.....	22	Chapter X—Murray Township.....	56
Chapter V—Railroad.....	32	Chapter XI—Washington Township.....	57
Chapter VI—Ecclesiastical and Fraternal.....	37	Chapter XII—Descriptive.....	59

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Index to Illustrations Indicated by Plates.

	PLATE.		PLATE.
Blasdel, H. G. Hon.....	7	Nelson, Charles.....	14
Crellin, John & Sons.....	3	Perkins, Geo. C.....	4
Curtner, H.....	28	Pacific Coast Oil Co.....	28
Crowell, H.....	28	Piedmont School Building.....	24
Court House.....	15	Pickering, Loring.....	27
Congregational Church.....	18	Shinn, James.....	27
Concannon, James.....	26	Solar Salt Works.....	21
Denison, E. S.....	12	Smith, J. P.....	23
Deaf, Dumb and Blind Institution.....	11	Schieffelin, E. L.....	26
First Presbyterian Church.....	13	St. Francis de Sales Church.....	22
Hastings, Frank S.....	5	Strobridge, J. H.....	10
Hall of Records.....	16	University of California.....	19, 20
High School Building.....	25	Unitarian Church.....	17
Murry, M. W.....	2	Whipple, Edwin.....	8
Merrill, J. M.....	6	Whipple, J. C.....	9
Map of Alameda County.....	1		

ALAMEDA COUNTY

Illustrated Album of Alameda County.



INTRODUCTION.

THE great territory west of the Rocky Mountains, extending to the shores of the Pacific Ocean, was comparatively unknown prior to the days of 1849. In the four decades since that date this unknown territory has been peopled, five great States and two Territories founded. These States and Territories are as yet sparsely settled in comparison with the New England States and the countries of the Old World, but they are dotted over with cities, towns, and villages, and with farms and other industries, the wild children of the forests of fifty years ago having disappeared, most of them to the "happy hunting grounds" and the remainder on the government reservations. The area of this portion of our land is about seven hundred and fifty-six thousand nine hundred square miles. (This does not include Alaska, with its five hundred and seventy-eight thousand two hundred and four square miles.) On the western shore of this slope, occupying seven hundred miles out of the twelve hundred on the shore line by a width of from two hundred to two hundred and seventy miles, lies California, known as the Golden State. Its area is one hundred and fifty-eight thousand three hundred and sixty square miles. It lies between longitude $32^{\circ} 50'$ and 42° N., and 114° and 124° W. of latitude. By reason of its peculiar situation it has the most diversified climate of any State in the Union, and as a consequence its productions are more varied than those of any other. It is the second in area of the States. On the line between it and the State of Nevada in the Sierra Nevada Mountains, it is cold in the winter, with snow and ice, while at the foot of these mountains, and between them and the Pacific Ocean, lies a very temperate and almost semi-tropical extent of territory, upon which the thermometer seldom falls to 32° above zero. In the greater part of the State, the heliotrope, fuchsia, and other plants of that nature, as well as the palms and other ornamental shrubbery that are early carried to the greenhouses in the East, are allowed to grow out-of-doors the entire winter. It is of rare occurrence that any of them are injured by frost, and many persons born and raised

in the State have only once or twice seen snow within forty years, except in the mountain ranges.

Of this great State, Alameda (pronounced alamay-dah, Spanish, meaning a driveway lined on each side by trees) County, the subject of this sketch, is a favorable part. Lying near the western coast, but yet far enough away to escape the sharp breezes and fogs prevalent along the coast, it has a most equable and even temperature, protected by remarkable natural phenomena. The succeeding pages are designed to set forth in a straightforward and truthful manner, without any boasting, the peculiar advantages of the county, and its cities and towns as places of residence, on account of healthful climatic conditions, its resources, growth, schools, railroads, etc. These are no overdrawn pictures, but simply statements of the fact.

CHAPTER I.

EARLY HISTORY AND PROGRESS.

Spanish-American Missions of Alta California—John C. Fremont, "The Pathfinder"—Mexican War, Raising of the Bear Flag—Cession of California, Finding of Gold and Admission into the Union, etc.—Natural Advantages—Health Statistics—Meteorology, Rainfall, etc.—Material Growth—County Government.

Alameda County, California, has a history dating back to 1797. During that year, under Governor Diego de Borica, of the then indefinitely known Spanish territory of Alta California, a settlement was made in the territory now embraced in this county by two friars, Ysidro Barcinallo and Augustin Merin, who, on the eighteenth day of June, founded the mission of San Jose, for the purpose of converting the Indians of the region to the Roman Catholic faith. An adobe church was built, and with it other mission buildings, some of them still standing, but which are fast crumbling away, and will soon disappear entirely. The mission prospered and grew rapidly in influence, outstripping the missions of San Francisco and Santa Clara. In the year 1822 its fathers had baptized no less than four thousand five hundred and seventy-three Indians, and its herds covered the hills in the vicinity by the thousands. In 1839 it had upon its rolls

of converts the names of twenty-three hundred Indians, and these were then living in and around the mission house, tilling the lands and taking care of the herds. Everything seemed prosperous and happy for these simple-minded people.

A few years later came the Mexican War with the United States, the occupation and cession of the territory to the United States. Prior to this was the secularization and spoliation of the missions, and the decay and death of the mission brought with them the destruction of the Indians, through the vices of civilization, as in other parts of the Union, until at this time, out of the thousands that tilled the land and tended the flocks for the fathers of Mission de San José, not more than half a hundred survive after fifty years. These descendants have settled about Pleasanton and Suñol, and once a year—on good Friday—visit the old mission of San José.

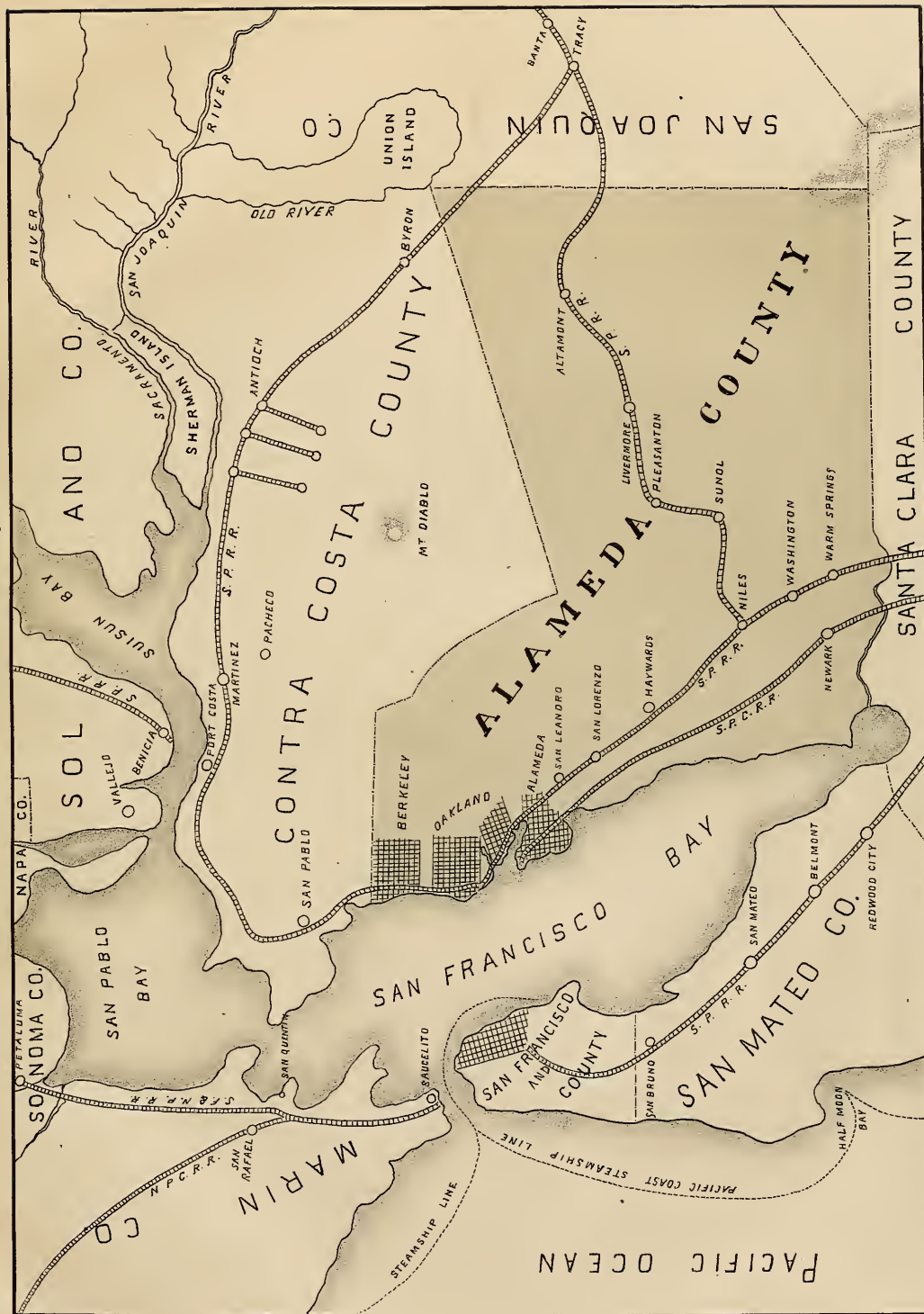
Of the land in Alameda County only a small portion of it was granted by the Spanish Government to settlers. Two ranchos were patented, however, to settlers under the rule of Spanish governors. Of these the first grant was by Governor Don Pablo Vicente de Sala, the last of the Spanish line and first Mexican governor, to Don Luis Peralta, of the Rancho de San Antonio, five leagues in extent, being the land upon which the city of Oakland and its suburbs are situated. This grant was made in the year 1820. In the following year Governor de Sala made a grant to the Rancho de las Tularcitos, partly within the present borders of Alameda, and partly within Santa Clara County. During the twenty-five years from 1821 to 1846 thirty grants were made by the Mexican governors of Alta California, covering lands now within the borders of Alameda County, principally given as rewards for faithful military services rendered to the Mexican Government. The boundaries of the grants were so indefinite that for many years after passing into American occupation, much litigation was necessary to determine the metes and bounds, but happily these are all now settled, and the boundaries definitely fixed. The last great suit was that of the Rancho el Sobrante, covering eleven square leagues of land, granted in 1841 to Juan José Castro by Governor Alvarado. The larger part of this rancho is now within the borders of Contra Costa County, of which Alameda County was, for a time, a part. Prior to the American occupation and cession to the United States of California, only one grant of land was made in the present boundaries of Alameda County by the Mexican authorities to a foreigner, and that was the rancho of Las Juntas, three square leagues, in the year 1844, to William Welch.

This brief resumé of the history of Alameda County would not be complete without a reference to the late General John C. Frémont, the "Pathfinder." He passed through the county in 1846, with a party of forty-two men, on his way to Oregon. He obtained permission from Governor Castro to pass through, but the permission was recalled before the start was made. Lieutenant Frémont disregarded the recall, however, and passed by Mission de San José and Alameda Cañon, near Niles, and camped at the lagoon in the valley between the present sites of Suñol and Pleasanton. The Mexicans immediately followed him, and from the Klamath Lakes he turned back and retraced his way to meet the Mexican forces upon his trail. When he reached Sonoma, he found that the "Bear flag" had been raised there and California declared independent. Here he learned that war had been declared by the United States against Mexico, and that Commodore Sloat had seized Monterey. Frémont raised a force of volunteers, and, driving the Mexicans before him up the valley of the San Ramon and down the valley of the Amador, he stripped Jose Maria Amador, and drove out all the armed forces of Mexicans from Alameda County toward the south.

After this expedition of Frémont through Alameda County a number of American families settled upon the rich lands of the county, and their descendants are still upon them. Prior to that time the only non-Mexican resident within the present limits of Alameda County was an English whaler named Joseph Livermore, who had settled upon the Las Positas Rancho, and in whose honor the town of Livermore, the pass, and valley are named.

On the discovery of gold by Marshall, at Coloma, January 19, 1848, there was a rush for the diggings, and one of the principal highways lay across Alameda County through the Alameda Cañon, *via* Suñol, the Livermore Valley, and Livermore Pass, to Stockton. Where Friars Barcinallo and Merin started the early missions—Mission San José—a good-sized town sprang up, making it really the first American settlement in Alameda County, as it had been the first Spanish. The town still exists, though the bulk of the population has drifted down nearer the bay, but the old mission is still the center of a very fertile district. A number of other towns have also sprung up adjacent to it, among them Irvington, Niles, Centerville and Warm Springs.

The foregoing pertains to Alameda County principally while under Spanish and Mexican rule. After the close of the war with Mexico and the cession of the Territory of Alta California to the United States, the first Territorial Legislature convened at San Jose,



GENERAL MAP SHOWING COUNTIES ADJACENT TO ALAMEDA CO. RAILROADS, NAVIGABLE RIVERS, BAYS, SHIPPING ROUTES FROM TOWNS & SCALE 7 MILES TO 1 INCH.



December 13, 1849, and at the session, the Territory was divided into twenty-seven great counties. Of these Contra Costa embraced the territory now included in its boundaries as well as a large part of that now known as Alameda County. On September 9, 1850, California was admitted to the Union as one of the States of the great federation, and the subsequent Legislatures divided up the immense counties into smaller ones. In 1853 the Legislature created the county of Alameda, with its present bounds, taking it off Contra Costa County, as well as a portion of the northerly end of Santa Clara County. At that time it had a population of three thousand, and the county seat was New Haven, now Alvarado. In December, 1854, the county seat was removed to San Leandro, by a majority vote, but it was ordered back to New Haven on account of informality in the election. In 1856, by an act of the Legislature, it went back to San Leandro. San Leandro continued to be the county seat until 1873, when, after a bitter contest, it was removed to Oakland. The old Court House building is standing on East Fourteenth street and Nineteenth avenue, though now remodeled and used as a dwelling. In 1874 new buildings down town on blocks on Broadway, between Fourth and Fifth streets, were occupied, which are still in use, though now becoming inadequate for the present needs of the county. Plates of these buildings are shown, Nos. 15 and 16. The majority of the county offices occupy the Hall of Records, in the block facing the Court House, across Broadway. In the Court House are now situated four court rooms, the county supervisors' rooms, the offices of the county assessor, tax collector, surveyor, district attorney and sheriff, and the rooms of the law library. The court business of the county has so increased that it was necessary for the establishment recently of one more department, and the occupation of the entire building by the courts and court officers is only the question of a short time.

After the admission of California into the Union, in 1850, Alameda County commenced its rapid growth and prosperity. Lying in the way of travel from the metropolis—San Francisco—to the interior of the State, towns and villages sprang up along the routes traversed, and finally spread entirely over it. Early in 1850 the manufacture of salt was commenced, and for many years the entire State depended upon it for its saline supply. Until quite recently Alameda was the only county in the State of California in which salt was manufactured. It was also the pioneer in the erection of flouring mills, agricultural and farming implement factories, and tanneries. The first smelting works for the reduction of rebellious ores in

the State were erected in this county. In 1853 the culture of fruit, the principal industry in several of the counties in the State, received its commencement by the clubbing together of a number of Alameda County farmers and sending one of their number East for trees, making the county early the seat of fruit culture, for which it has since become noted. In this county, at Alvarado, in 1869, was erected the first mill and refinery in the United States for the manufacture of sugar from beets. The factory has been enlarged and now does a large and profitable business in sugar manufacturing. The factory and process of extracting the sugar is elsewhere specifically described in this pamphlet. There are also in the county many other manufacturing industries, such as iron foundries, nail works, car works, bridge works, smelting works, agricultural machinery works, soap works, fuse works, borax refinery, tile factories, etc., cotton and jute mills, planing mills, flouring mills, and many others which are mentioned in detail in these pages.

TOPOGRAPHY OF THE COUNTY.

Natural Advantages—Fertility—Freedom from Fogs and Causes.

The area of Alameda County, while small in comparison with some other of the counties in California, comprises four hundred and fifty-four thousand five hundred and sixty-five acres, and upward of seven hundred square miles. Its topography is broken in its northern and eastern sides by hills and valleys of the Contra Costa range, the highest peak of which is that of Mission San José, rising two thousand two hundred and seventy-three feet above sea level. Among these hills are some of the most fertile valleys of the State and continent. The largest of these is the Livermore Valley. Others of the larger valleys are the Moraga, Suñol, Castro, Amador, and Calaveras. The western portion of the county lies along the eastern shore of the Bay of San Francisco for thirty-six miles, and in coves along the shore are found the oyster beds from whence were taken the bivalves in the exhibit. Between the foothills of the range named and this bay shore lies a fertile plain from five to twelve miles wide, the hills in no place south of Berkeley being nearer than five miles. With the exception of a few salt marshes along the shore line, the land between it and the foothills consists of a rich alluvial soil, adapted to horticulture and agriculture, and upon which are grown the fine deciduous and citrus fruits as well as the vegetable and agricultural products in the Alameda County exhibit. In time the marshes mentioned will undoubtedly be filled in and become productive lands, bordering on the small

streams which flow through them into the bay from the foothills.

In the fertile valleys in the foothills of the eastern portion are grown many of the various fruits, both deciduous and citrus, shown in the county exhibit, while on the hillsides and in these valleys are produced the different varieties of grapes for table and the manufacture of wines and brandies. There is a large area applicable in these valleys and on these hills, that has not yet been opened up and set out in vines and fruit trees. They are generally easy of access. In these valleys in the hills the almond and English walnut thrive well and hundreds of acres of them are now in bearing, the products finding their way to the Eastern States. The hills are usually rolling and easy to traverse, the valleys being easy of access. There are numerous little streams watering the county and rendering it fertile, the largest being Alameda Creek. The county is bounded upon the north by Contra Costa County, of which it was at one time a part, and on the east by San Joaquin County, and on the south by Santa Clara, west by the Bay of San Francisco. In shape upon the map it is very much like a boot, with the sole toward the west and the toe pointing north.

CLIMATE.

In referring to the advantages of Alameda County as a place of residence by reason of its topographical situation and climatic superiority, the following from the pen of Ex-Mayor William R. Davis, of Oakland, with the accompanying diagram showing the air currents and causes for non-prevalence of fogs; common at certain seasons on the seacoast, written for the *Oakland Tribune*, is applicable and pertinent, and is by permission published here:—

CLIMATE AND AIR MOVEMENT IN ALAMEDA COUNTY— THE WHY.

"No stranger realizes, and few residents understand, how Oakland and Alameda County have such an equable and delightful climate, compared with that of San Francisco, although Oakland is only six or eight miles, just across the bay, east of San Francisco.

"On the opposite page is a diagram, which, with a few words of introduction, will at once speak familiarly to the reader. To the westward of us, some twelve or fourteen miles, is the Pacific Ocean, beating against the feet of the first row of Coast Range hills. The Golden Gate is a pass through this first row of hills, being about six miles long and over a mile wide. The Bay of San Francisco and the ocean connect through this channel or gate. At the inner or eastern end of this channel the western bay shore lines turn northward and southward, substantially parallel with the ocean shore line, San Francisco being on the northeastern

corner of the peninsula, south of the Golden Gate, and between the ocean and the bay. This peninsula is of about the same width, from bay to ocean, as the distance eastward from San Francisco across the bay to Oakland—say six miles. On the Oakland side the land rises from the bay level, on the gentlest slope, back to the second row of Coast Range hills. This slope extends from Berkeley on the north (a city of eight thousand inhabitants, where the University of California is located) down in a southeasterly direction to and far beyond the Alameda and Santa Clara County line. The soil of this slope is generally a warm, sandy loam, fertile, and easy of cultivation, and now produces almost every berry, fruit, plant, tree, cereal, vegetable, shrub, and flower grown from Oregon to Arizona. From Berkeley on the north to the county line on the south is about thirty-five miles. This slope varies in width from three miles on the northern end to more than thrice that width as you proceed southward. At Oakland its width is approximately five miles.

"The elevation of this slope, before reaching the rolling foothills, is in the body of the city from twenty to forty feet above the tide level. The eastern part of Oakland is upon the rising ground of the foothills. The two rows of coast hills above mentioned run nearly parallel, from southeast to northwest, and both lie substantially at right angles to the route of the trade winds or prevailing sea breeze, coming off the ocean from the southwest, during the summer and fall months—from about the latter part of May to the middle of September. We are now ready to proceed to the consideration of the matter, the importance of which cannot be overestimated. Taken with the conceded advantages of location, transit, educational institutions, good order, freedom from debt, wealth, resources, and soil, it makes Oakland the most desirable spot for habitation on the Pacific Coast. If the point is new, that will not detract from its importance.

"Let us now look at the diagram on the next page.

"*The arrows show the course of the sea breeze.* The profile at the bottom of the diagram shows substantially the hill obstruction which the sea breeze encounters in its northeasterly course. (I need scarcely mention that the summer heat of the interior land surface, lying to the eastward, rarifies and raises the atmosphere there and draws in the cooler atmosphere from the adjacent ocean, just as heated air over the fire rises in the chimney and draws in the cooler air from about the fireplace.)

"Now follow the arrows. Commencing at the ocean, the ocean breeze (bearing much or little fog) literally bumps against and rises above the first row



RESIDENCE OF M.W. MURRY. JA



SON AND LAKE STS. OAKLAND.

of coast hills. These hills are, say, four hundred feet high south of the Golden Gate, and twice that height north of the Golden Gate. This pitches the general breeze four hundred to eight hundred feet above the sea level in its flight inland. It has then only from ten to fourteen miles to go until it would encounter the second row of coast hills. This second row is substantially twice as high as the first. The result and the fact are that the general ocean breeze cannot and does not descend in its course anywhere near the water level between these two rows of hills. Being pitched up by range number one, it bears its moisture and maintains its course high enough to pass over

ever do for any city what Nature is steadily doing for the city of Oakland and vicinity. The fog clouds pass overhead at an elevation of from five hundred to two thousand feet. This is nature's sunshade, catching the rays of the summer sun and casting cool and grateful shadows on the land surface below, whilst it leaves that surface free from wind and dampness. There is a horizontal triangle of protection also. At the Golden Gate this sea breeze can and does come in on the water level; but by reason of the conformation of the hills, this tongue of wind becomes forked—one part traveling northward and the other to the south-east. The small arrows show the course and divisions

of this lesser current. One part bears northward around the point of hills north of Berkeley; the other bears southeast down the bay. The former is quite strong, the latter rather weak. The reason for this is clear; the former runs in the direction of the prevailing sea breeze overhead, and hence maintains its velocity; the latter turns down the bay, almost at right angles with the general over current, and hence its force is dissipated and weakened. This forking of the Golden Gate current leaves Oakland again in the triangle of repose. Of this horizontal triangle the base is at the hills to the eastward, and the other two sides are the two forks of the Golden Gate's current of wind. For these reasons, considering these two triangles, I think I may justly say Oakland is in the triangle of peace. Under these circumstances it is not strange that strangers do not realize the fact that there is such a marked difference between the climate of San Francisco and that of Oakland. I believe these triangles furnish the solution of the question. On this point, too, there is a singular little fact well worth considering. That is this:



and up on the top of range number two. The fog clouds, as a matter of fact, scrape the top of the second row of hills and then pass on northeastward. This leaves Oakland and the slope of which I have spoken in a triangle. Consider the triangle standing vertically. The hill barrier to the east would lie behind the imaginary upright line of the triangle; the land slope would be its base line, and the path of the ocean breeze would be the upper line of the triangle, or its hypotenuse. In this triangle the air is free from fog, and moves gently eastward with just enough motion, bracing coolness, and refreshing stimulus to make the temperature delightful, life comfortable, and healthfulness certain. No sanitary department elsewhere can

When water runs out of a waterspout or trough, if the trough is uneven on the under side, some water drips or curls under, while the main stream goes ahead. Just so in this case.

"The general front of the fog-bearing sea breeze bumps against and rises over the uneven top of the San Francisco hills; a little of the wind curls under at the uneven summit of the first row of hills, and bears down on San Francisco. But this curling down of the cloud current goes no further practically. This curling down and the two triangles of repose account, in my judgment, for the phenomenal fact that Oakland, only six or eight miles from San Francisco, has

a climate so much more benignant, and as different as though the two cities were a hundred miles apart.

"The views here given will account for the following facts: (1) Why a stiff summer sea breeze bears down in the streets of San Francisco; (2) why that wind brings fog down with it to the land surface there; (3) why the waves on the Bay of San Francisco run higher on a line extending northeasterly from the inner face of the Golden Gate than elsewhere; (4) why the summer wind is strong across San Pablo Bay and up the Straits of Carquinez; (5) why Oakland has absolutely no fog down in her streets when it is down on the west side of the bay; (6) why there is no surface trade wind at Oakland; and (7) why the fogs of the San Francisco peninsula become grateful clouds over Oakland and vicinity.

"The environments of the slope on the eastern side of the Bay of San Francisco duplicate those of Athens, which is *one* of the reasons why Oakland is designated the Athens of the Pacific. This is not a fanciful, but a real resemblance. The hills about Athens and also the Grecian archipelago are one with the hills and bays here. The clouds, the temperature, the sky, the breeze, the landscape, the half-shadowed country, are substantially the counterpart of ancient Greece. Whenever the Creator casts a kindly handful of sunbeams on old Greece, he, next morning, casts gently another handful over the new Greece—this Athenian slope.

"This slope is well watered and has an abundant rainfall every season. Such a thing as drought or irrigation upon it was never dreamed of, and will never be necessary. So fertile is this soil from Berkeley down to the county line that trees, flowers, and shrubs planted and properly tended, as, for example, about a new house, will at the end of the second or third season make the spot look as if it had been occupied and cultivated ten years. I have seen this actual result in almost numberless cases in and about Oakland. The heliotrope and fuchsia grow outdoors in Alameda County without so much as the shelter of a newspaper or sheet throughout the winter, and frequently attain a height of from eight to twelve feet. Geraniums thrive side by side with the heliotrope and fuchsia, and often reach a height of from six to ten feet. This slope is the paradise of flower and tree life as well as of animal and human existence. The average annual variation in temperature at Oakland between summer and winter temperatures—taking the average temperature of the months including winter and those including summer—is *only eight degrees*. Upon this inviting slope the most exacting and painstaking home seekers, old Pacific Coast residents who

know the *entire* coast, have been and are now locating their homes. The stranger, not knowing the relative merits of different localities, may be satisfied with a better country than his, though not the best; but the old resident (from Washington Territory, Oregon, Nevada, and California) knows that the garden spot, the paradise of the Pacific Coast, is upon the slopes and in the valleys about the Bay of San Francisco.

"On this slope there are no less than thirteen towns and cities north of the Santa Clara County line—Berkeley, Temescal, Oakland, Alameda, San Leandro, San Lorenzo, Hayward, Niles, Alvarado, Newark, Centerville, Irvington, and Mission San José. Of these the principal ones are: Oakland, sixty thousand; Alameda, twelve thousand, and Berkeley, eight thousand—say, eighty thousand inhabitants in these three cities. The other towns and the intervening population include substantially twenty-five thousand people. So that, excluding San Francisco, this slope is at once the center of the State and of its population."

The population of the entire county is now at least one hundred thousand. It is increasing annually by fifteen thousand. This means a population of two hundred and fifty thousand in ten years, without any special additional causes contributing. But whatever else happens, incoming railroads, completion of the harbor, more active development of manufactories—any or all these are bound to accelerate the increase beyond that now going on. The surest county in California is Alameda.

HEALTH ADVANTAGES.

Low Death Rate and Exceptional Freedom from Sickness—Statistics of Oakland, Alameda, Berkeley, etc.

The topographical situation and the natural conditions and phenomena previously mentioned, contribute to make Alameda County and its cities and towns, especially Oakland, Alameda, and Berkeley, and their suburbs, unexcelled for good health. One of the most important of these natural conditions is the daily afternoon breezes that sweep over the county from the Pacific Ocean in the summer and autumn seasons. These are so tempered and modified by the distance from the ocean and the conformation of the land that they are mild and bracing and yet are sufficiently strong to carry away any noxious or poisonous gases that may arise from sewerage or decomposing substances. The same peculiarities of coast conformation serve also to carry the fog prevalent along the coast away, so that it seldom settles down upon the eastern side of the Bay of San Francisco, because on striking the hills along the ocean coast, it is driven



RUBY HILL VINEYARD. PROPERTY OF JOHN C.



upward and over the bay at considerable height and strikes the Contra Costa Range. That portion of it coming in at the Golden Gate is driven along by the breezes accompanying to the Straits of Carquinez and San Pablo Bay. While the immediate coast from Point Reyes to Santa Cruz may be enveloped in fog, Oakland, Alameda, and Berkeley and adjoining towns of Alameda County, are in sunshine or may be in partial shadow from the fog clouds passing several hundred feet overhead.

Being thus favored by nature, it is no wonder that the health of the community is exceptionally good, as is shown by the statistics, taken from the official records of the health offices.

The average death rate of Oakland for the past ten years shows an annual percentage of 13.57 per 1,000. The following is the rate per year from July 1 to June 30:—

For 1882 and '83, 13.66; 1883-84, 13.92; 1884-85, 12.72; 1885-86, 13.22; 1886-87, 12.36; 1887-88, 15.03; 1888-89, 14.82; 1889-90, 13.43; 1890-91, 12.80; 1891-92, 13.86.

The records of the health office show that during the past eight years five hundred and sixty-four persons have died from pulmonary diseases. Of these two hundred and seven had resided in Oakland more than ten years; sixty-six died of whom the time of residence is not given; ninety-nine resided between five and ten years; twenty had lived here five years; sixty-eight, between three and four years; thirty-eight, two years; seventy-one, between six months and one year; fourteen, six months; eleven, five months; fifteen, four months; thirteen, three months; nineteen, two months; nine, one month, and thirty-one, less than one month. This shows that very few, if any, of the deaths from consumption occurred among the old residents of the county, while hundreds of cases are known in which persons with weak lungs have entirely recovered.

The records of the health office of Alameda City show a lower death rate than that of any other city on the Pacific Coast, and in fact it is claimed by the health authorities, lower than any other city in the United States. It claims to have the most perfect sewer system, with appliances for continuous flushing, in use anywhere in the world, and that this tends to the better health of its citizens. The death rate is about 11 per 1,000.

The town of Berkeley, with its 8,000 inhabitants, has as yet not fully organized a board of health, though it has a health officer acting under instructions of its town trustees. The records of its health statistics are not complete and could not be accurately ascertained.

The death rate is, however, about the same as that of Oakland, being 14.97 per 1,000 per annum. A complete system of sewerage is under contemplation.

The interior towns of San Leandro, Haywards, Niles, Livermore, Pleasanton, Irvington, Newark, Alvarado, Centerville, etc., while without boards of health, show by the records of death as published in their newspapers an exceedingly low death rate in comparison with those of other parts of the United States.

ST. MARY'S COLLEGE.

One of the largest educational institutions in Alameda County is that of St. Mary's College, occupying a block of seven acres in North Oakland, fronting on New Broadway. St. Mary's was founded by Archbishop Alemany, of San Francisco, in 1863, and was conducted by the priests of the diocese on the outskirts of South San Francisco until 1868, when the management was transferred to the order of Christian Brothers. In 1872 the college was empowered to confer academic honors. In 1887-88 a new and enlarged building was erected in Oakland, and the school was transferred to it in 1889. The faculty consists of eighteen professors and instructors, who devote their entire time to the school. The studies are divided into two departments, collegiate (classical and scientific) and commercial. There is also a preparatory department with four grades. The building is 190 feet frontage with wings of 150 feet. It is five stories high, is furnished with elevators and all modern improvements. A model of this building and a special display of the work of the students of this college is exhibited at the Columbian Exposition in the Educational Department.

METEOROLOGY, TEMPERATURE AND RAINFALL.

The temperature of the western shore of California for many miles inland is affected by the warm current in the Pacific Ocean known as the Japan stream. The topography also affects the temperature and the rainfall. Along the coast the rainfall in some localities reaches 50 to 75 inches during the season, while in others the mean average runs from 20 to 30 inches. The average difference of annual rainfall in the State of California extending from northwest to southeast is a little over two inches for every degree, and the meteorological records for a number of years show that the increase in rainfall is about one inch for every 100 feet in elevation in ascending the Sierra Nevada Mountains. There is more rain in the northern part of the State, and a gradual decrease towards the south. People living at the East who have never visited California, who read of many feet of snow at Truckee or Bodie, California, are inclined to think all of California

ILLUSTRATED ALBUM OF ALAMEDA COUNTY.

is under snow. The fact is that the points in this State where snow is measured by the feet are located at an altitude greater than Mount Washington, and while there may be eighteen feet of snow at the Summit in Nevada County and at Truckee at an elevation of 7,000 feet, the orange trees eighty miles nearer the Pacific Ocean are laden with fruit. Alameda County lies west of the cold zone, south of the heavy rain belts of the northern coast, and yet is north of the dry belt of the southern coast.

The following tables show the rainfall in inches for the seasons of 1881-82 and 1891-92 inclusive, and the mean annual rainfall for the eleven years, the temperature for the same time and that of the seasons, as well as the relative humidity, etc., for the past year:

In only two years has the average temperature of the months ranged over 14 degrees, and that its mean range is not quite 12½ degrees.

MEAN TEMPERATURE 1891-92.

Mean temperature of winter.....	53.10
Mean temperature of spring.....	54.08
Mean temperature of summer.....	62.03
Mean temperature of autumn.....	57.09
Difference between the coldest and warmest of spring months.....	2.07
Difference between the coldest and warmest of summer months.....	3.34
Difference between the coldest and warmest of autumn months.....	5.08
Difference between the coldest and warmest of winter months.....	6.69
Difference between the coldest and warmest months of the year.....	13.55

RAINFALL IN INCHES FOR YEARS AND MONTHS 1881-92.

Years	1881-82	1882-83	1883-84	1884-85	1885-86	1886-87	1887-88	1888-89	1889-90	1890-91	1891-92
Months.	Quantity.. Days.....	Quantity.. Days.....	Quantity.. Days.....	Quantity.. Days.....	Quantity.. Days.....	Quantity.. Days.....	Quantity.. Days.....	Quantity.. Days.....	Quantity.. Days.....	Quantity.. Days.....	Quantity.. Days.....
July .....	.....	.....	.....	.26 1	.02 2	.15 1	.10 1	.....	.....	.....	.15 2
August .....	.....	.....	.....	.....	.....	.....	.....	.92 1	.....	.10 3	.87 2
September .....	.40 1	.42 2	1.00 2	.35 3	.05 2	.05 1	.27 2	.06 1	7.30 12	.....	.20 5
October .....	.82 7	2.65 9	1.03 7	2.80 4	.30 2	1.59 5	.....	3.52 10	2.89 7	.....	.55 13
November	1.49 5	4.33 7	.90 3	.05 3	11.11 17	.45 6	.78 2	4.82 12	13.27 21	3.19 6	6.64 9
December	5.09 10	1.14 9	1.15 6	7.73 13	4.43 8	3.60 6	3.22 6	.90 4	10.22 19	.95 7	2.31 9
January	2.42 9	1.95 3	3.81 9	1.92 7	8.12 13	1.57 6	6.42 16	.93 5	5.76 12	11.37 16	3.68 9
February	2.05 10	.70 5	5.25 10	.48 3	.30 4	7.83 16	1.02 4	.63 5	4.73 15	3.10 11	2.89 8
March	4.20 11	3.33 8	8.59 11	1.07 5	2.57 11	.71 4	4.44 9	7.60 14	4.73 15	2.77 8	1.09 7
April	1.51 8	2.20 8	5.79 10	3.12 9	5.11 11	2.35 6	.10 2	.93 7	1.51 3	1.60 5	2.49 9
May .....	.15 3	3.50 11	.55 5	.10 1	.30 5	.10 2	.48 3	1.92 9	1.17 3	.11 1	.....
June .....	.....	.....	3.03 10	.08 6	.....	.05 2	.46 7	.07 1	.....	.....	.....
Totals	18.13	64.20.22	62.31.10	73.17.95	55.32.21	75.18.45	55.17.20	55.21.37	64.46.95	98.23.19	57.20.87

NOTE.—Mean annual rainfall for eleven years, 24.33 inches.

The following will more particularly illustrate the climate of Oakland for the past eleven years, as it regards the equability of seasons and the difference between the warmest and coldest:—

Years.	Spring	Summer	Autumn	Winter	Difference
1882	54.46	60.40	57.75	48.20	12.20
1883	55.18	61.17	57.67	50.39	10.78
1884	55.73	59.36	56.92	59.12	9.24
1885	56.16	60.07	56.73	49.57	10.50
1886	52.97	58.95	55.86	45.38	13.57
1887	56.35	60.27	54.78	51.10	9.17
1888	54.12	60.06	56.44	46.80	13.26
1889	54.63	61.16	54.25	46.20	19.26
1890	55.59	61.89	57.07	47.38	14.51
1891	58.08	61.23	59.52	51.69	13.33
1892	55.06	61.69	56.89	52.12	13.41
Means.....	55.29	60.46	56.72	49.81	12.47

Difference between the warmest and coldest means of the seasons for eleven years is 16.51.

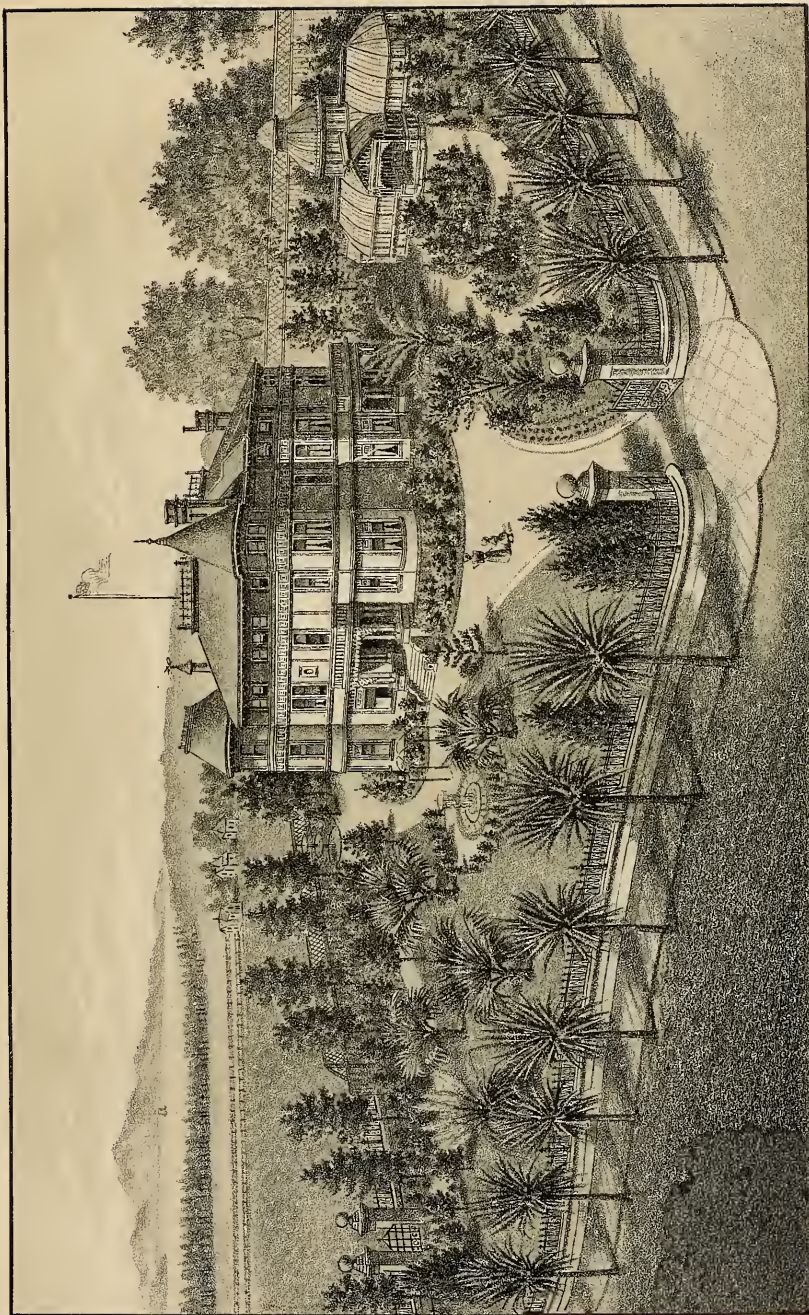
MATERIAL GROWTH AND INCREASE.

Wonderful Progress of the County in the Past Quarter of a Century—Almost Doubled in Assessed Value within a Decade.

The material growth and prosperity of Alameda County, especially during the past quarter of a century, has been gradual, progressive, and substantial, rather than of a mushroom character. It contains no towns or cities on paper. The interior towns and villages mentioned in this album are prosperous communities and all have a productive country surrounding them.

During the earlier years of the county's history, the principal product of the land was in cereals, as the records of the assessor's office for 1856 show the cereal crop of that year to have been nearly two million bushels, on forty-two thousand fifty-four acres. Of this twenty-two thousand fifty-four was in wheat, and twenty thousand in barley, while there were

PLATE 4.



RESIDENCE OF GEO. C. PERKINS, VERNON HEIGHTS, OAKLAND, CAL.

three thousand one hundred and eight acres in potatoes. Of the orchards that year there were four hundred and twenty-six acres in apples and one hundred and seventy-three in peaches. There were thirty-four acres in vineyards. The live stock was put down at four thousand seven hundred and thirty-four head of horses, one thousand sixty-seven mules, seventeen thousand five hundred and forty-eight neat stock, and ninety-three thousand two hundred and eighty-one sheep. The average yield was estimated for the fifty-six thousand five hundred and nine acres under tilth at fifty bushels to the acre, valued at \$120. From this the annual product of the thinly populated county at that time was estimated at \$4,000,000. The growth of the county the past thirty years from its population of three thousand to upward of one hundred thousand, has been marvelous, and its industrial growth and prosperity have kept pace with its population, as the perusal of the succeeding pages will show.

The following tabulated statement, taken from the annual recapitulation tables of the county assessment rolls, shows the increase in the assessed value of real estate, improvements, and personal property, added together by years since 1882, and including that of 1892-93. During the eleven years mentioned there have been no so-called booms, but the growth has been gradual and steady:

TABLE SHOWING THE INCREASE IN VALUE OF ALAMEDA COUNTY BY TOWNSHIPS, CITIES AND INCORPORATED TOWNS, FOR 11 YEARS, 1882-92, AS SHOWN BY THE ASSESSMENT ROLLS.

Year.....	Alameda Township..	Berkeley.....	Brooklyn Township..	Eden Township.....	Hayward	Livermore.....	Murray Township..	Oakland Township..	San Leandro..	Washington Township..	Oakland.....	Totals.
1882	\$ 4,778,150	\$1,671,177	\$3,323,568	\$2,777,089	\$386,457	\$250,503	\$2,913,462	\$3,421,394	\$577,086	\$4,175,402	\$24,675,331	\$48,949,619
1883	5,918,403	2,357,812	2,464,186	3,048,997	475,672	286,268	3,223,412	4,113,375	613,463	4,324,198	30,013,676	62,141,462
1884	6,091,513	2,305,378	2,350,159	3,277,087	498,930	408,198	3,662,360	4,291,359	614,205	4,801,828	29,500,535	57,531,758
1885	6,805,763	2,618,702	2,395,595	3,640,860	523,322	487,730	3,877,810	4,573,174	664,926	4,090,358	31,633,293	61,315,526
1886	6,298,150	2,418,944	2,184,035	3,058,371	484,718	465,456	3,526,325	4,271,587	592,085	4,173,535	28,498,030	55,926,236
1887	6,521,991	2,491,450	2,337,355	3,260,479	519,120	515,284	3,891,119	4,324,162	617,315	4,278,100	29,415,341	58,171,746
1888	7,239,332	3,126,125	3,140,492	3,599,261	687,022	533,445	4,010,093	4,701,561	659,777	4,660,275	31,398,528	64,447,916
1889	7,872,609	3,283,960	3,265,180	3,617,951	604,509	526,645	4,112,400	5,248,353	781,810	4,900,092	34,727,926	68,941,464
1890	9,022,866	3,497,413	3,328,935	3,861,245	638,825	599,885	4,238,380	5,487,036	863,500	5,114,495	39,275,659	75,808,220
1891	10,245,155	4,092,040	3,747,345	3,944,623	691,665	620,805	4,490,983	6,762,357	930,425	5,205,041	42,566,283	81,031,722
1892	10,918,625	6,240,435	5,019,925	3,969,495	777,040	614,475	4,575,195	6,165,825	982,065	5,289,990	44,288,755	88,841,825

The assessed value of the fiscal year 1892-93 of the four hundred and forty thousand three hundred and fifty-five acres of land in the county lying outside of the cities and incorporated towns, is \$17,209,725. The assessed value of the improvements on this land is \$2,780,580. Of the entire area of the county, fourteen thousand two hundred and ten acres are within the corporate limits of cities and towns, and are valued at \$39,369,775, with improvements to the value of \$22,137,020. The personal property valuation is \$7,464,620, and the total assessed value of the county

is \$89,700,041. Included in this total is \$165,216 as the assessed value of telegraph and telephone lines in the county, which is not included in table.

Alameda County is practically without indebtedness. In the year 1874 bonds in the sum of \$200,000 were issued at eight per cent per annum interest, running for twenty years, ten per cent of the principal payable annually. These bonds were issued for the purpose of erecting the new county buildings on the removal of the county seat to Oakland. The interest and principal have been met each year, and only \$20,000 now remains outstanding. This will be obliterated next year, and the county be entirely out of debt. The tax rate for 1892-93 was only eighty cents on the hundred dollars valuation.

THE COUNTY GOVERNMENT.

The government of the county is divided into legislative, executive, and judicial branches. The legislative is under the control of the Board of Supervisors, similar to the County Courts in some States and Board of County Commissioners in others. The executive is partly under control of the Supervisors and partly under the general law as carried out by the Sheriff, constables, etc. There are five Supervisors, elected by the people of different supervisory districts at the biennial elections, to serve for a term of four

years. Their terms are so fixed that all do not go out of office at the same time. Of the present Board the terms of two will expire January 1, 1895, and the remaining three January 1, 1897. The regular meeting of the Supervisors is held on the first and last Monday of each month. The Supervisors have charge of much of the county's business, fix the tax levy, open highways, grant railroad and other franchises, county licenses, look after the poor, etc.

The other county officers are the County Clerk, who is ex-officio Clerk of the Superior Court, which

has jurisdiction over criminal, civil, and probate business, and is likewise clerk of the Board of Supervisors; the County Auditor, County Assessor, County Tax Collector, County Treasurer, County Recorder, County Surveyor, Sheriff, Coroner, County Superintendent of Schools, and District Attorney, whose duties are similar to those performed by like officers in other States; the Public Administrator, whose duty it is to administer on estates of deceased persons whose heirs are unknown. There is no Register of Wills or Prothonotary. All wills are filed with the County Clerk, and proof is made in the Probate department of the Superior Court. The terms of the County Assessor and the County Superintendent of Schools are four years, and those of the other officers two years.

The Judicial Department, or Superior Court, is divided into four departments, each presided over by a judge, all having concurrent jurisdiction and sometimes sitting together in bank in important cases. Each department has assigned to it civil, probate, and criminal cases, these being distributed by the County Clerk

according to the date of filing, as provided by the rules of the Court. The Superior Court has jurisdiction of all felonies and high misdemeanors, the jurisdiction of lesser offenses being vested in Police Courts in cities and the Justices' Courts of the townships, from whose decisions appeals may be had to the Superior Court. The Justices of the Peace likewise have jurisdiction in civil matters in actions at law, where the amount claimed, exclusive of interest and costs, does not exceed \$300.

The Grand Jury meets twice a year and presents indictments for any crime cognizable by the Superior Court. The Judges of the Police and Justices' Courts are also committing magistrates and may bind defendants to trial before the Superior Court without the intervention of the Grand Jury. In the latter instance informations are filed by the District Attorney and the prisoner tried in the Superior Court as on indictment by the Grand Jury.

Alameda County has in the State Legislature two State Senators and six Assemblymen, the former with terms of four and the latter two years.

CHAPTER II.

HORTICULTURE, VITICULTURE, AGRICULTURE, ETC.

A Great Fruit Growing Center—Unequaled for Viticulture, Producing the Finest Wines in the World—Unexcelled for Cereal Crops—Flowers in Profusion, Including Many of the Semi-tropics—Roses Blooming All the Year Round and the Heliotrope and Fuchsia Out-of-doors during the Winter—Immense Vegetable Crops—Sericulture.

HORTICULTURE IN ALAMEDA COUNTY.

Unexcelled for Fruits of all Kinds—Immense Advance in the Past Ten Years.

It is said that fruit culture in the early days of California was incidental, and that it should ever become the chief industry of a great commonwealth was not then dreamed possible. The horticultural history of California dates back to 1701-7, when Alta California as well as Lower California was under Spanish rule. It commenced by the cultivation of a rich tract at St. Xavier, on the Mexican border. It is a matter of record that Father Ugarte had in the latter year bread of his own raising off this tract, while New Spain was suffering from drought. He is also said to have made more wine from the vineyards of the St. Xavier Mission than necessary for its use, and to have exported small quantities to Mexico. It was not until nearly half a century later that the portion now known as the

State of California was occupied by the whites. The Jesuits were driven from the missions of Lower California in 1767, and the Franciscan monks placed in charge. Junipero Serra was made president of the missions and divided them between the Franciscans and Dominicans. In 1769 the Franciscans came northward. Serra and José de Galvez, Visitor General, representing the king of Spain, established the new missions of Alta California, and among the supplies caused to be sent from Spain by Galvez were flower, vegetable, and fruit seeds as well as cereals.

They established twenty-one missions, and to all, except three, were attached gardens and orchards, so that the olive, fig and grape were introduced early. The trees were grown from the seed chiefly and were all or nearly all seedlings, and from these are still propagated the varieties known as the mission olive, the mission grape, and the black fig, called the mission fig. In the closing years of the last century and the opening of this, there were growing near Mission San Jose, now in Alameda County, apples, pears, apricots, peaches, and figs, and at some of the missions in the southern portion were, in addition to these, oranges, limes, grapes, olives, and pomegranates—in all about five thousand bearing trees. These have increased in the century to nearly thirty-one million trees, and of this number about one million six hundred thousand



RESIDENCE AND ORCHARD OF FRANK S. HASTINGS NEAR SAN LEANDRO, CAL.

are in Alameda County. Of these about one million are in bearing. Among the first apples grown in the State were those of Mr. Lewelling, of San Lorenzo, Alameda County. There are in the county fifty thousand five hundred apple trees, three hundred and thirty-one thousand apricot, two hundred and twenty-seven thousand one hundred cherry, twenty-three hundred fig, thirty-seven hundred olive, one hundred and thirty-seven thousand five hundred peach, forty thousand seven hundred nectarine, two hundred and thirty-five thousand one hundred prune, one hundred and seventy thousand one hundred pear, one hundred and eighty-eight thousand five hundred plum, four hundred quince, one hundred lemon, twelve hundred orange, one hundred and twenty-three thousand seven hundred almond, thirty-six hundred English walnut. This has been the growth, practically, of the past twenty years, as the entire output of fresh fruit in California in 1871 was only one million eight hundred and thirty-two thousand three hundred and ten pounds, while in 1892 about four hundred million pounds, or upward of twenty-two thousand car loads, were shipped out of the State. The immense growth is shown in the past ten to twelve years by the fact that the total number of car loads shipped in 1880 was only five hundred and forty-six. Beside the immense quantity shipped by rail about eighteen million pounds were shipped by sea. Of this Alameda County contributed, it is estimated, three million two hundred and fifty thousand pounds, and it ranks as one of the leading fruit counties of the State. In the production of cherries it stands at the head. Of this fruit more are shipped to Eastern markets than from all other parts of the State.

Not only do the orchard fruits flourish well in this county, but the small fruits, such as currants, gooseberries, raspberries, strawberries, blackberries, etc., do equally well, and there are now nearly fourteen hundred acres in these fruits.

Little or no irrigation is needed in the entire county. There is only one canal of any extent—that of the Murray and Washington Ditch Company. It is about five miles long and is assessed at only \$1,100. There are about fifty artesian wells in the county, varying in depth from two hundred to four hundred feet. These are sunk at a cost of about \$1.50 per foot.

In his report to the California State Board of Horticulture last October, Prof. C. H. Allen, special agent for the counties of Alameda, Contra Costa, Monterey, Santa Clara, Santa Cruz, San Benito, and San Mateo, has this to say:—

“Alameda County has some of the oldest and most celebrated orchards in the State. The almost fabulous yields of apricots and cherries in this county, with

the amounts realized per acre for the fruit, gave the first vigorous impulse to fruit growing in California.

“The Hayward district, comprising the plane from San Leandro to Suñol Cañon, lying so closely contiguous to San Francisco, was naturally the favorite region in which to grow fruit for the home market. The fact that abundant water was found, comparatively near the surface, made irrigation easy for small fruits. These were and are grown in large quantities and find a ready market. Large areas of currants, gooseberries, and other small fruits are producing, and are, in many cases, grown between the trees in the bearing orchards. The most notable orchard is that of the Meek estate, consisting of nearly one thousand acres. One hundred and fifty acres of this are cherries, more than two hundred acres are apricots, two hundred and twenty are almonds, seventy are pears, and more than two hundred acres are prunes. In these orchards there are one hundred and forty acres of currants and ten acres of blackberries. The output from this orchard has far outgrown the home market, and large shipments are now being made to the Eastern markets. Through all this region the fruit goes either fresh or in cans, as the climate is not adapted to drying in the sun, and the cost of fuel is too great for profitable artificial drying. Many of the large canneries of the State depend upon the Alameda orchards for a considerable portion of their supply, and not a few of the inland packing houses transport from this locality fruit to dry.

“It was years after fruit growing had become a leading industry in this locality before it was determined that the more easterly parts of the county were adapted to fruit. At Mission San Jose there were some orchards, the offspring of the old mission, and a large almond orchard had long been in profitable bearing there, but it was doubted whether in the drier part—the Livermore Valley—fruit could be grown without irrigation. Grapes were planted, and succeeded beyond expectation, and gradually tree planting has made its way until at Niles, at Centerville, and beyond the Suñol Cañon, in Suñol, Pleasanton, and Livermore, there are excellent orchards. Most of them are yet young, but they bid fair to compete favorably with the fruit belt in the Santa Clara Valley. Most of the orchards are in the lowlands. They have yet to learn that the foothill land is equally adapted to fruit culture, and that culture can take the place of irrigation. The fruit area here is surely destined, in the near future, to be greatly increased.

“At Niles is one of the largest, if not the largest, nursery in the State. The California Nursery Company, with a capital of \$100,000, has about five hun-

dred acres in nursery stock, consisting of fruit trees, vines, and ornamental trees and shrubs. Their sales in 1891 were about seven hundred and fifty thousand fruit trees and two hundred thousand ornamental trees and shrubs.

"The orchards in this county seem to be well kept, fruit pests being absent or well in hand, and there is on every hand evidence of prosperity."

VITICULTURE OF THE COUNTY.

The Finest Wines of California and of America are Made in Alameda County—Three of the Paris Exposition Prizes out of Four Awarded to American Viticulturists Won by Alameda County.

The viticultural industry of Alameda County, although commenced nearly a century ago by the Mission Fathers of Mission de San Jose, is only of recent date, or at least has only come into prominence within the past ten to fifteen years. The first wine growers making any quantity were in the vicinity of Mission San Jose, but during the past fifteen years large areas have been planted in the Livermore and other valleys, and from the few growers of that date are now about one hundred and sixty raising different varieties of wine grapes. Only thirty-one of these, however, make wine, the remainder selling their grapes to the wine makers. In 1892 there were about seven thousand acres in wine grapes in the county, and the output for the season aggregated about one million two hundred and fifty thousand gallons. The wines of Alameda County, especially the Sauternes and the Medocs, are equal to any in the world, and of four gold medals awarded to American wines at the Paris Exposition, 1889, three of them were carried away by products from Alameda County. The largest and most complete winery in the United States was built a few years ago at Irvington, near Mission San Jose, by Juan Gallegoes, and nearly five hundred thousand gallons were made there last season. This winery is capable of storing several million gallons. There are yet thousands of acres in the Livermore and other valleys in the county suitable for the cultivation of the vine.

Some of the vintages of the Livermore Valley, especially in the Sauternes and Medocs, are unexcelled by any of the productions of the famous French vine growers. One of these is said to be the equal of a famous French brand, and is so near like it that the best judges were unable to detect any difference. Those of Mission San Jose and Warm Springs are also equal to the best imported wines.

AGRICULTURE IN ALAMEDA COUNTY.

From 1856 until about fifteen years ago the agricultural area of the county increased and the cereal prod-

ucts were considerable. The cultivation of much of the land in the Livermore Valley, in and around San Leandro, Hayward, Niles, Mission San Jose, Centerville, Warm Springs, etc., has during this time been changed to horticulture and viticulture. In 1856 the entire area in agricultural products was about forty-five thousand acres, and annual yield about two million bushels. In 1870-75 it was much greater, and large warehouses were established at different stations along the railroad lines and at various landings where the products were shipped to market. In 1892 the area in agricultural products according to the assessment rolls was two hundred and three thousand acres, or three hundred and fifteen square miles. Of this ninety-seven thousand acres were in hay, sixty-eight thousand in barley, thirty-six thousand in wheat, twelve thousand two hundred and fifty in oats, and one thousand six hundred and fifty in corn. The output for the year 1892 was two million bushels of barley, one million bushels of wheat, and about five hundred thousand tons of hay. Corn is only grown for market gardening, and the sweet varieties for table use are those principally produced. Very little is used for stock food or for grinding purposes. The barley is the finest grown on the coast, Chevalier frequently running as high as fifty-six pounds to the bushel, the standard being fifty-one pounds. The cereal crops produce from thirty to fifty bushels per acre on the rich soils of the county. The market for barley is near, as it is principally sold in Oakland and San Francisco to the brewers, and much of the wheat is also used in home consumption, but the market is not limited to that of home, because a great deal of grain is shipped by vessel around Cape Horn to the United Kingdom and the Continent. The hay product, which is principally that of grain, though other kinds are grown, finds a ready market at a good price in the metropolis and at the county seat.

FLORICULTURE AND ARBORICULTURE.

One of the Garden Spots of the World—Flowers and Shrubbery, Including Semi-tropical Plants in the Open Air all the Year Round.

Nowhere in the world, not even in China, called the Flowery Kingdom, do flowers of all kinds grow more profusely and with less care than in California; with proper care and cultivation their production is wonderful. Alameda County is especially favored by nature for the cultivation and production of all kinds of flora, and her florists send roses and other flowers as far east as Salt Lake City every month in the year. Roses bloom in the yards and on the lawns every month in the year, and so does the delicate heliotrope



RESIDENCE OF J.M. MERRELL, COR. 23
BAY AND CITY OF SAN



HST. AND TELEGRAPH AVE. OAKLAND.
SAN FRANCISCO IN DISTANCE.

—a plant that scarcely attains any size in the rigorous climate of the East, but which attains a vigorous, bushy growth in Oakland and interior towns out-of-doors to the height of four and five feet, and in especially favored localities even more. The delicate fuchsia, the hothouse pot plant of the East, frequently attains the height of eight and ten feet, with blooms of large size—sometimes three or four times that usually seen East. It also remains out-of-doors all winter. Magnolias and calla lilies thrive outdoors during the entire year without shelter. The fragrant violet is to be found the year round in bloom, and its perfume is as sweet in December, January, and February as at any other time of the year. Geraniums of all kinds bloom in the yards every month in the year, and the various varieties of Lady Washingtons, with magnificent large flowers, are the wonder of the visitor. The pansy is found in bloom also the year round. Even the sweet pea and the nasturtium are to be found growing outside during the winter months. The crysanthemum commences to bloom in October and continues to do so out-of-doors in the yard the entire winter. During the past two or three years this magnificent plant from Japan has been so improved that its immense flowers of all colors and of combined colors are the glory of the flower garden. It is unnecessary to mention the many hardy perennials by name, because they all thrive in Alameda County.

The most popular of the indigenous flowers is the escholtzia, or California poppy, and during the months of April, May, and June the uncultivated fields and hills are covered with this beautiful flower, often remaining in bloom until July and August.

Ornamental shrubs of all kinds and variety thrive out-of-doors during the entire year, only the most delicate of tropical plants requiring the hothouse. Palms and ferns from the semi-tropics and South Sea Islands adorn the grounds of many citizens of Alameda County, and are as common as the spruce and fir in colder locations at the East. The cedar is now used only as a hedge and is seldom grown as a lawn decoration, palms and ferns of various varieties being used instead.

VEGETABLES.

All Varieties Grown in the County—Green Peas from January to December.

The County of Alameda furnishes to the metropolis of the State of California much of the large quantity of vegetables consumed by its residents. Green peas

are gathered in the warm valley near Niles, Mission San José, and Warm Springs every month in the year, and in January it is a beautiful sight to see the green rows of this vegetable product on the hillsides. During the months of April, May, and June an average of three car loads per day are shipped from this locality. Large quantities of tomatoes and potatoes are also produced, as well as onions, squash, cabbages, beets, etc., and several crops per year are grown and may be purchased at the vegetable stands the year round, it being unnecessary to bury them to keep them from being frozen. The finest rhubarb grown in the United States is produced in the vicinity of San Leandro. It is said that during the months of April, May, June, July, and August about \$200 to \$300 daily come into this town of two thousand five hundred inhabitants as the proceeds from the sale of vegetables and fruits grown in the vicinity. Large-sized cabbages may be purchased from the vegetable stalls of Oakland the year round—summer and winter—for five cents each. Large quantities of cucumber pickles are produced in Eden Township. Cauliflower and celery are also among the vegetable products, and find ready sale at reasonable prices during summer and winter. The old-fashioned pumpkin of the East is seldom seen, but the hard-rinded squash in endless variety takes its place, and the pumpkin pies of our grandmothers are very well counterfeited.

HOPS.

In the Livermore Valley are grown the finest hops produced in the world. The area at the present time is not very extensive, but it is being enlarged, and may be done with profit to the growers. The Pleasanton hops are admitted by experts in New York to be of the best quality grown, and are shipped to Europe.

SERI-CULTURE.

An experimental station for the culture of silkworms has been in operation at Piedmont, Oakland Township, since 1885, under the direction of the Ladies' Silk Culture Society of California, and is still in operation. It is believed by the members of the society that there may be a profit in planting the mulberry tree and cultivating the silkworm, if the farmers will take an interest and get their children interested in it. The experiments now carried on are for the purpose of ascertaining the best variety of mulberry and the best species of silkworm to grow.

CHAPTER III.

EDUCATIONAL ADVANTAGES.

Higher Education—The State University at Berkeley—Its High Rank—The State Institution for the Deaf and Dumb and the Blind—Private and Religious Colleges, Seminaries and Academies—Unrivaled Public Schools throughout the Entire County.

The educational advantages of Alameda County are not excelled anywhere in the Union, not even in New England, of which Boston is the boasted educational center. Having an unrivaled climate and desirability as a place of residence, Oakland, Alameda, Berkeley, and suburbs or the interior towns are within reach of the University of California and other institutions of higher education by reason of excellent system of electric street railroads now in operation and in process of construction, and which will be completed within a few months. The public school system is second to none, and the recent act of the Legislature creating union high schools throughout the counties permits students in the interior of the county to prepare at their homes for entrance to the State University without the expense of attending a preparatory school, or of receiving a good education, fitting them for the active duties of life without attending the higher institutions of learning.

UNIVERSITY OF CALIFORNIA.

A Great Educational Institution Situated in Alameda County.

Among the prominent institutions situated in Alameda County is the University of California, the principal departments of which are situated at Berkeley. The history of the State University runs back to the early days, and before California was admitted into the Union of States, but its effective work as an institution of learning did not begin until eighteen years later.

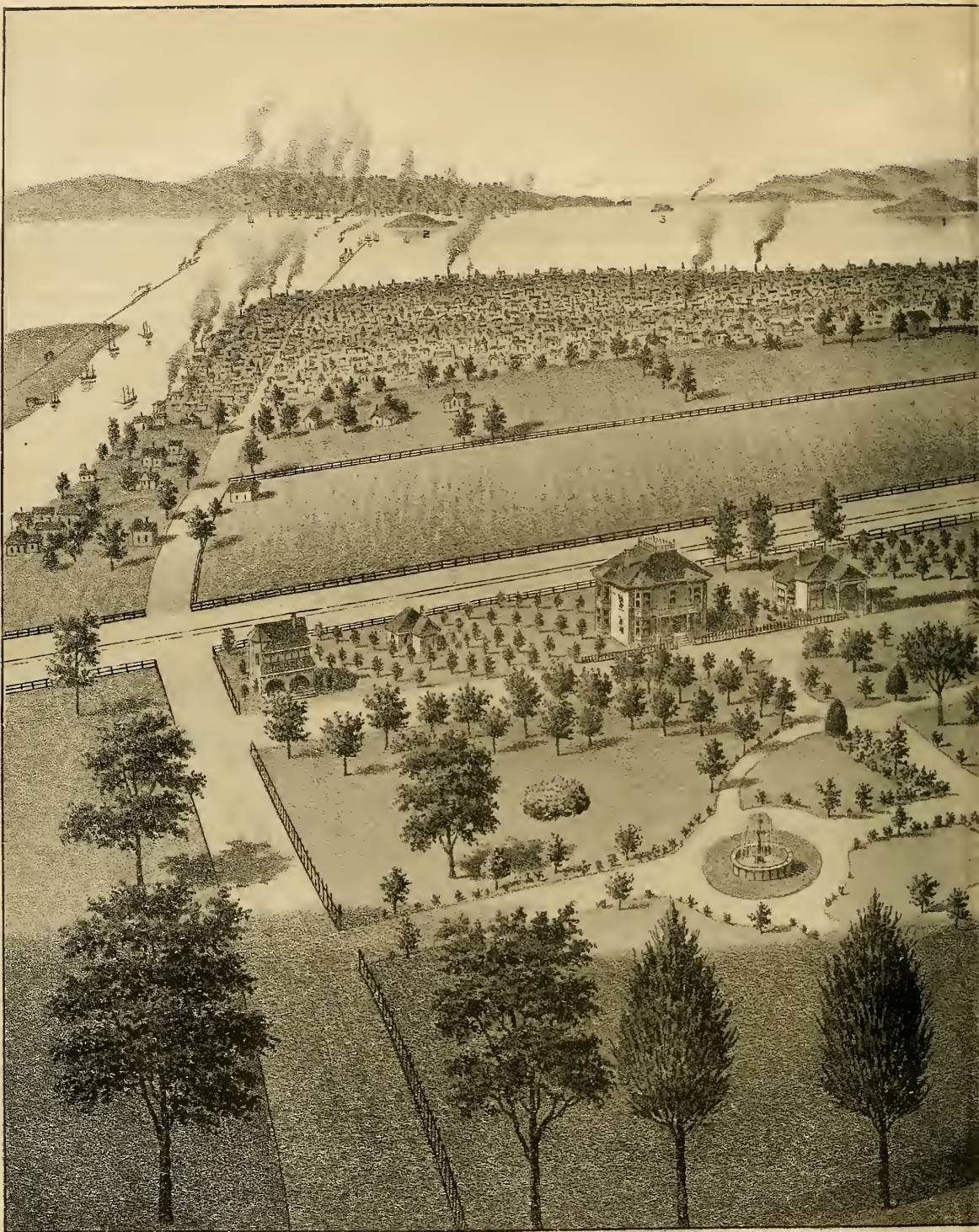
In 1849 the Constitutional Convention placed a provision in the Constitution so that lands reserved or granted by the United States to the State for the use of a University should remain a permanent trust, the interest on moneys received for lands sold by the trustees to be applied to the support of the University. In 1852 Congress granted seventy-two sections of land to the State, and the proceeds of their sale went into the University fund. The same Act set aside ten sections for a public building fund. Under an act of 1862 California received fifty thousand acres of public land for the establishment of an Agricultural and Mechanical Arts College. In 1863 a scheme for the establishment of this college came to naught, and an Act passed in 1866 to accomplish the same end was repealed.

In the year 1853 Rev. Henry Durant and wife arrived in California and established a school for boys in a vacant saloon at the corner of Fourth street and Broadway. Dr. Durant at once began agitating the project of establishing a great college. His persistence bore fruit, and in the summer of 1853 was purchased the plat of land bounded by Twelfth, Fourteenth, Franklin, and Harrison streets, Oakland, and the College of California organized. A building fund was raised and several buildings erected in the neighborhood of Twelfth and Webster streets for the college and preparatory school. The money for the most part was furnished by Rev. Isaac Brayton, and he appeared to have a controlling interest in the college. About one hundred and sixty acres of land were secured at Berkeley, but the college in 1866, after thirteen years of struggle, was \$49,000 in debt, and affairs in a bad way, with low funds and a lack of students.

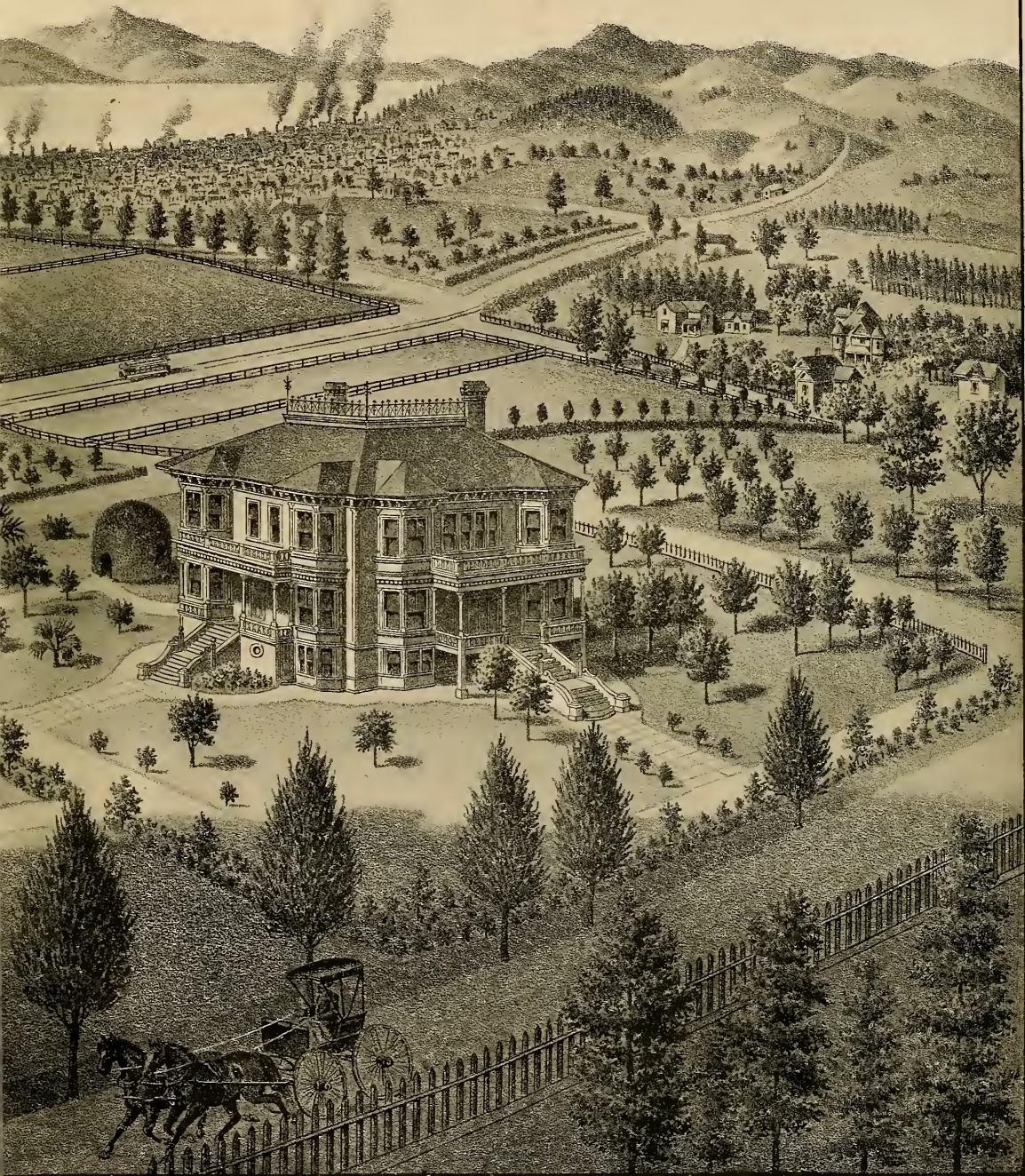
The attempt to found and establish a State university had, up to this time, not been very successful, and at the suggestion of Governor F. F. Low, the State University, backed by funds, but with no buildings, and the California College in need of funds, with buildings, experience, and professors, were consolidated; at the suggestion of Governor Low, the trustees of the College of California, in August, 1867, offered to the State their site, etc. The State Board of Directors accepted the gift, receiving property consisting of the four blocks in Oakland, the college and school buildings, a library of 10,000 volumes, valuable homestead lots in Berkeley, and one hundred and twelve acres of the so-called "mountain land," the whole estimated to be worth \$160,000, but from which liabilities amounting to over \$49,000 were to be subtracted, assumed, and paid. At the request of the Board of Directors of the State institution, the old College of California continued in life until the spring of 1869, there being in 1867 no State law under which the university could be properly founded.

In March, 1868, a general Act was passed, entitled "An Act to provide for the incorporation of such institutions of learning, science, and art as may be established by the State." March 5, 1868, the late Hon. John W. Dwinelle introduced a bill for "an Act to create and organize the University of California," and this Act became a law on March 23, 1868, since celebrated as Charter day. With this Act the Legislature appropriated \$306,661.80, creating the University fund and providing for a government by the Board of Regents.

The site of the buildings at Berkeley is a very handsome one, being on rising ground, near the foothills,



VIEW LOOKING WEST. RES. OF H.G. BLASDEL, SITUATED ON EAST OAKLAND HIGHWAY
23 & 24 RUNNING NORTH AND SOUTH, PART OF OAKLAND, SAN FRANCISCO, CITY
2. GOAT ISLAND



5 . SHOWING STREETS FROM 24 TO 27 STS. RUNNING EAST AND WEST. ALSO AVENUES
 D BAY, GOLDEN GATE AND PACIFIC OCEAN IN THE DISTANCE. 1 ANGEL ISLAND.
 3. ALCATRAZ

which rise up in their rear to the height of several hundred feet. There are about two hundred and forty-five acres in the University grounds.

The buildings of the University proper consist of the North and South Halls (the two oldest and largest buildings), the Bacon Art and Library Building, the College of Mining and Mechanical Arts, the Agricultural Building, the Chemical Building and Laboratory, and the Electrical Building.

These are of fair architecture and good construction, principally of brick and stone. The surrounding grounds are being gradually improved and are already quite attractive. The landscape gardening is after plans suggested by Ex-State Engineer Hall. In January, 1879, A. K. P. Harmon, of Oakland, donated to the University a gymnasium building, which has been properly furnished. It is octagonal in shape, will seat one thousand two hundred people, and is used as a place for holding hops, lectures, commencement and similar exercises. In connection with the gymnasium are a campus and cinder sprinting path. The North Hall building has four stories and a ground area of one hundred and sixty-six by sixty feet. It cost \$92,468. The South Hall has an area of one hundred and fifty-two by fifty feet. Its architecture is superior and its cost was \$198,000. The Bacon Art and Library building is named after H. D. Bacon, of Oakland, who, in November, 1877, donated to the University a fine art collection, and \$25,000, with a proviso that the State appropriate \$25,000 additional for the erection of a suitable library building and art gallery. The appropriation was made and the building erected. There are, properly, two buildings in one. That fronting on the west is rectangular; the rear building is semicircular. The front portion is eighty-eight by thirty-eight feet. The center of the façade rises into a tower one hundred and two feet in height. The interior arrangements are well designed. There are broad lobbies and stairways, an elevator, reading rooms, committee rooms, store rooms, and a large art gallery, well lighted from the top. The rotunda of the library portion is sixty-nine feet in diameter and fifty-seven feet in height. It will hold ninety thousand volumes. There are now in the gallery upward of fifty thousand books. The art gallery contains many paintings and sculptures by the best artists. The College of Mining and Mechanical Arts is a three-story structure of brick, stone, and iron, well furnished with mechanical apparatus.

For the College of Agriculture, a substantial building has been erected. In connection with this college is an experimental station, sustained by the United States Government, and which receives reports from

various portions of the State on matters connected with agriculture, horticulture, and viticulture. It has a viticultural laboratory.

The Chemical Building and Laboratory is one of the most complete departments in the University, consisting of two stories and basement.

Owing to the general uses to which electricity and electrical appliances are being put, the Regents of the University during the past year had a building erected, at a cost of \$56,000, used as a College of Electrical and Mechanical Engineering.

There are twenty-two buildings in connection with the State University and its grounds at Berkeley. The cost of these buildings was \$558,000, and the further sum of \$300,000 was expended for apparatus. As there are about two hundred lady students attending the University, the erection of a Woman's Building is in contemplation.

In addition to the buildings mentioned is the Students' Observatory to the north, and the two-story brick viticultural cellar on Strawberry Creek. There are a number of cottages owned by the University and occupied as homes by private individuals.

Besides these departments and buildings of the University at Berkeley, are the Colleges of Law, Medicine, Dentistry, and of Pharmacy, situated across the bay, in San Francisco, and the Lick Observatory, on Mount Hamilton, Santa Clara County, all of which are under the care of the Board of Regents of the University, a brief history of which is subjoined.

In 1878 Hon. S. C. Hastings, now deceased, donated \$100,000 for the establishment of a Law College in San Francisco, to be a component part of the State University. This department is now prosperous and efficient.

The Toland Medical Institute became merged in the University in 1873, as the Medical Department of the University of California. This was brought about by gifts of the buildings and property in San Francisco, by the late Dr. Toland. The property is valued at about \$25,000, and is used jointly by the Colleges of Medicine and Dentistry. The latter expect to soon have a separate building.

Though the gift of money and property in 1879, for the formation of a College of Dentistry, came to naught, a Dental Department was organized in 1882, and its standard is now second to none in the country, and is admitted to be unexcelled by any in Europe.

In 1872 a College of Pharmacy was incorporated by private individuals and subsequently became one of the integral portions of the University. It now has a faculty of seven members, and the number of stu-

dents is constantly increasing. Most of the students are engaged in work in the Medical Department.

Among the gifts to the State University were that of the late Edward Tompkins, of Oakland, of forty-seven acres of land on New Broadway, for the establishment of the Agassiz Professorship of Oriental Languages; donations by William and Eugene Hille-gass and George M. Blake, of portions of the University site; the Michael Reesé Library fund, of \$50,000, and the \$75,000 given in 1881 by D. O. Mills, to found the chair of Intellectual and Moral Philosophy and Civil Polity. The will of the late Dr. C. M. Hitchcock, of Napa, bequeaths a certain portion of his estate to the University, conditioned entirely upon the failure of his daughter, Mrs. Lillie Coit, to leave issue at her death. The possible value of this endowment may be stated as \$25,000.

One of the greatest gifts to the University was the \$700,000 left by James Lick for the establishment of a great astronomical observatory. This observatory, located on Mount Hamilton, Santa Clara County, was turned over to the Regents in 1888. The plant cost \$582,000. A graduate school or college in astronomy where a post-graduate course is given, is maintained. The income from the remainder of the gift is hardly adequate for the maintenance of the department, but the additional sum required is taken from another portion of the University's revenue.

One of the features of the University of California is its Museum of Natural History. The purpose and scope of the museum have been, up to the present time, first, to contain and furnish type collections for class teaching; and, secondly, to put on exhibition for the benefit of visitors all that could be made accessible. Its collection is gathered from all over the world.

The University of California furnishes facilities for instruction in science, literature and the professions of Law, Medicine, Dentistry and Pharmacy. In the colleges at Berkeley, namely, those of Letters, Agriculture, Mining, Mechanics, Civil Engineering, Chemistry, Electrical and Mechanical Engineering and Military Science, these privileges are offered without charge for tuition to all persons qualified for admission. The professional colleges in San Francisco are self-sustaining and only require moderate tuition fees. All courses are open to all persons without distinction of sex.

Its departments of instruction comprise the following:

I. In Berkeley:—(1) The College of Letters: (*a*) Classical Course; (*b*) Literary Course; (*c*) Course in Letters and Political Science; (2) the College of Agriculture; (3) the College of Mechanics; (4) the College

of Mining; (5) the College of Civil Engineering; (6) the College of Chemistry; (7) the College of Electrical and Mechanical Engineering.

II. In San Francisco:—(1) The Hastings College of the Law; (2) the Toland College of Medicine; (3) the College of Dentistry; (4) the California College of Pharmacy.

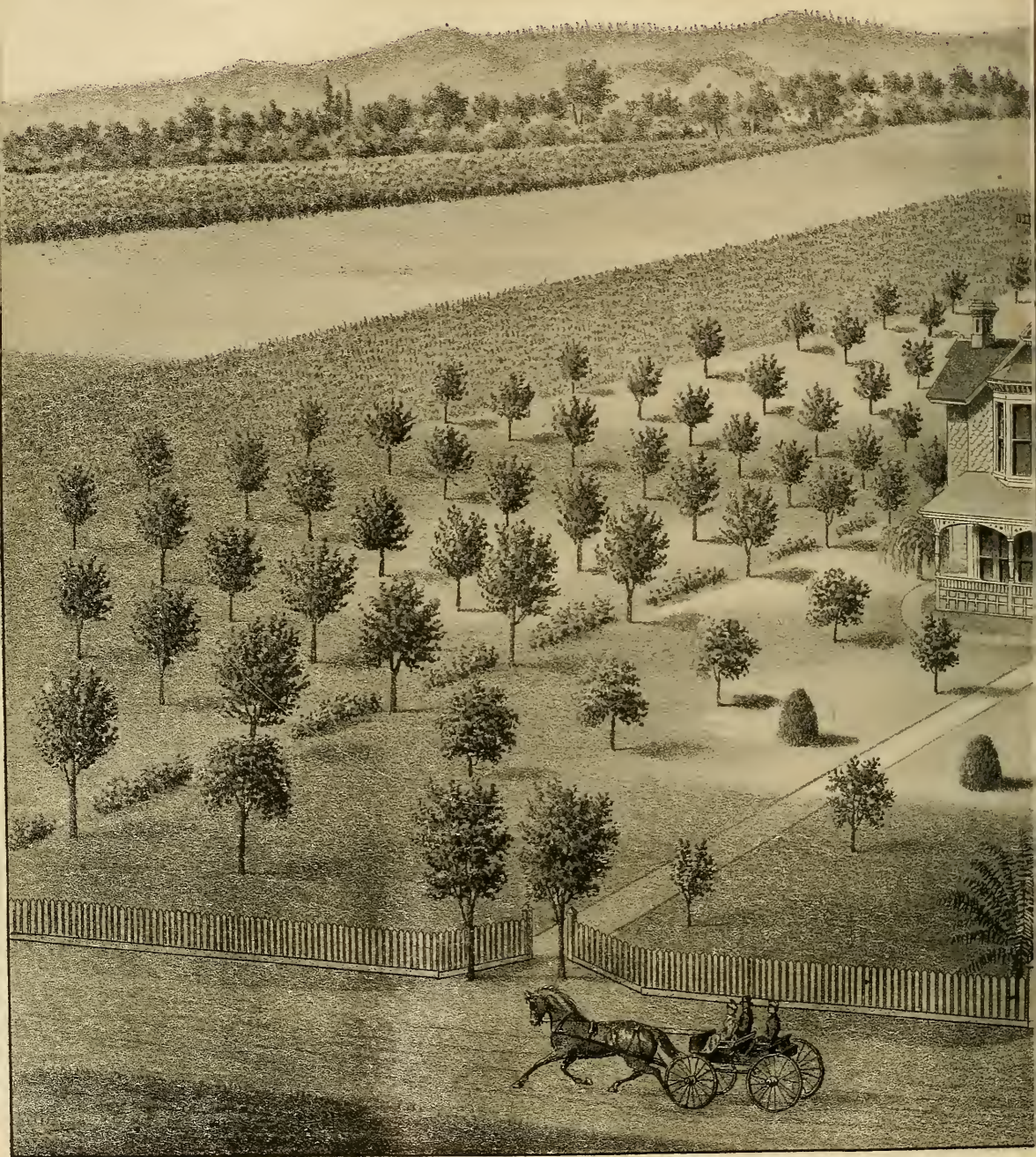
III. In Santa Clara County:—The Lick Astronomical Department (Lick Observatory, Mount Hamilton), with a graduate School in Astronomy.

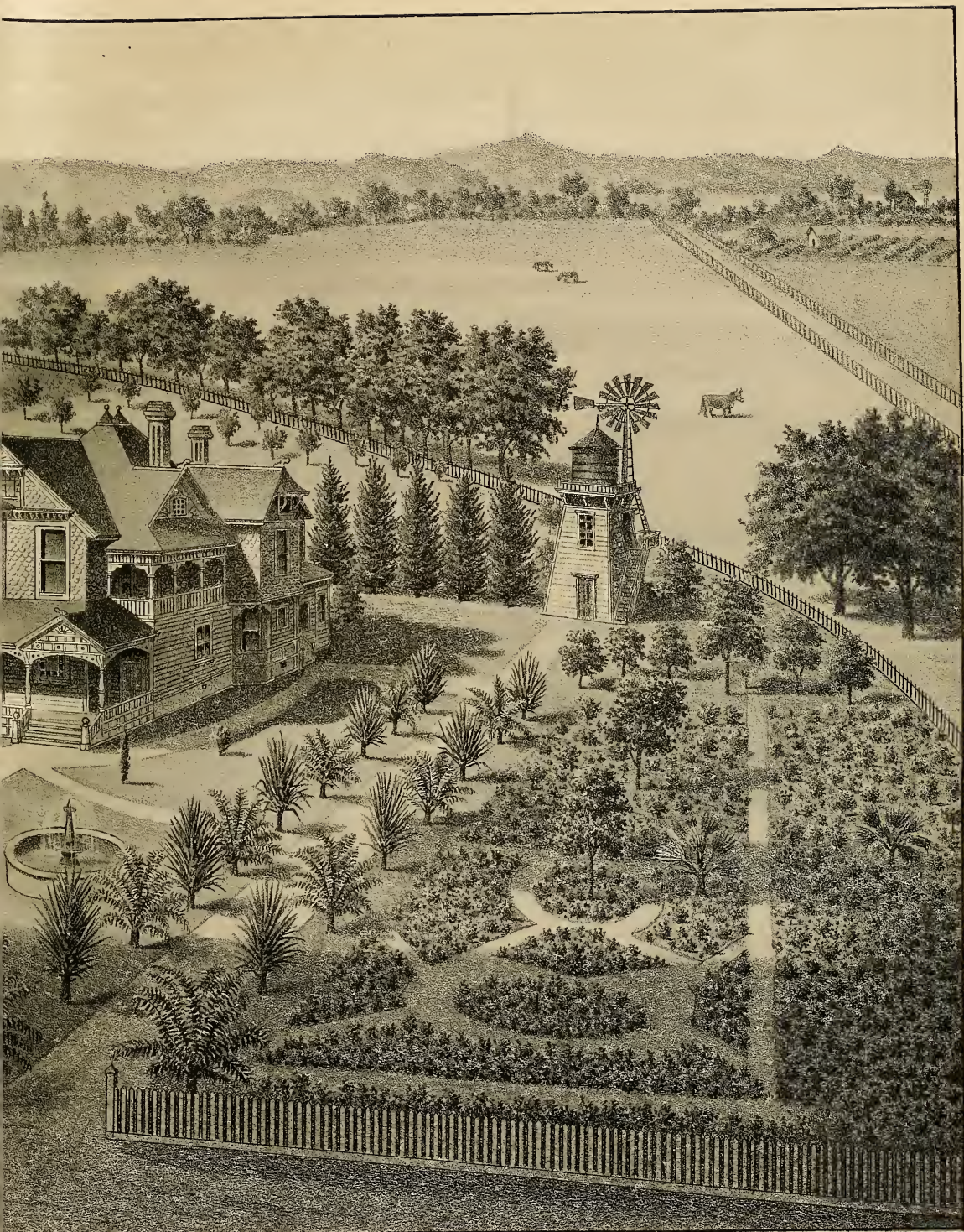
The total endowment of the University of California is nearly \$7,000,000. The cash capital is \$4,053,824.57, and the value of real and other property, \$2,899,954.72.

The Department of Military Science has for a number of years been one of the features of the University of California. It includes two hours each week in tactical instruction in the field, and one hour a week in the study of military science, engineering, fortifications, strategy, tactics, ordinance, gunning, military law, courts and boards, improvements in war, study of the battles, etc. This department is in charge of an officer of the Regular Army of the United States, detailed for that purpose by the Secretary of War. Its standard in rank is No. 1 of all the military schools in the United States. It is composed of all the able-bodied male undergraduate students for four years in the colleges at Berkeley, and any claiming exemption are required to undergo medical examination. Those over twenty-four years of age and foreigners may be excused. The battalion last year comprised three hundred cadets, divided into six companies, with the necessary field, staff and company officers, commissioned by the Governor, from the battalion, under the law of the State. The course of instruction pursued is in accordance with rules prescribed by the President of the United States, and is divided into a Practical and a Theoretical Course. In the latter part of April each year the department is inspected by an Inspector-General of the United States Army, who reports to the Secretary of War. The uniform is dark blue, except the officers' trousers, which are a light blue.

From Mr. James Sutton, the Recorder of the Faculties of the University, the following accurate statistics of the students in attendance in the various departments for the year 1892-93 were obtained:—

Departments.	Men.	Women.	Totals.
ACADEMIC.			
Graduate Students.....	31	9	40
Undergraduate Students.....	399	183	582
PROFESSIONAL.			
Law.....	118	2	120
Medicine.....	86	12	98
Dentistry.....	114		114
Pharmacy.....	99	4	103
Lick Astronomical.....	4		4
Totals.....	851	210	1061





PLE, DECOTO, CAL.

There is no tuition charged at the seven colleges situated in Berkeley, viz.: The Colleges of Agriculture, Mechanics, Mining, Chemistry, Engineering, and Letters. Small tuition fees are charged students in the colleges of Law, Medicine Dentistry, and Pharmacy in San Francisco. The only other Universities of the larger class in the United States that do not charge tuition are the Leland Stanford Jr., at Palo Alto, California, and the Kansas University, though the charges at the Michigan and several others are light.

In an article recently written by Miss Millicent W. Shinn, a graduate of the University of California, the following comparisons of the great Universities are made, with reference to capital, income, teachers, and students.

Total wealth of (1) Columbia College, \$18,000,000; (2) Harvard, \$16,700,000; (3) Yale, \$11,000,000; (4) Michigan, \$9,000,000; (5) California, \$8,130,720; (6) Cornell, \$8,000,000; (7) Pennsylvania, \$6,800,000. The annual incomes from these are estimated at \$1,026,738 for Harvard; Columbia, \$800,000; Yale, \$499,720; Michigan, \$400,000; Cornell, \$350,000; California, \$306,661, and Pennsylvania, \$275,000. The Universities of Wisconsin, City of New York, Boston, Nebraska, Johns Hopkins, and Vanderbilt she finds range in incomes from \$101,500 to \$82,987. Miss Shinn says she can find no financial statements from Princeton College, nor from the Leland Stanford Jr. University, but as near as she could ascertain, these two and the Chicago University have incomes between \$100,000 and \$200,000. In a comparative table, showing the number of students, Miss Shinn places the University of California as seventh in the list, with one thousand and seventy-nine for 1892, with Michigan University at the head, having two thousand six hundred and ninety-three students. California stands fifth in the list as regards teachers, having one hundred and ninety-four; Harvard leads the list, with two hundred and fifty-three, Columbia, two hundred and twenty-six; Yale, two hundred and twenty-five, and Pennsylvania, two hundred and seven; Michigan, with more than double the students, compared with California, has only one hundred and forty-nine instructors. The proportion of graduate students to the undergraduate and professional in the University of California is the same as that of Michigan, Boston, and Wisconsin, and is one per cent below Yale and Pennsylvania, four per cent below Harvard, seven per cent below Cornell, and nine per cent below Columbia.

The opening of the great Leland Stanford Jr. University at Palo Alto has had no injurious effect upon the University of California, but, on the other hand, the student roll of the State Institution shows a larger increase during the past two years than ever before.

INSTITUTION FOR DEAF AND DUMB AND THE BLIND.

An account of the origin and purpose of the State School.

The special education necessary to the deaf and dumb and the blind has been munificently provided for by the State, at the Berkeley Institution. Such children as are unfortunate enough to be deprived of either of the senses of sight or hearing are there provided for, free of all cost.

The State Institution is as much a part of the public-school system of California as is the State University. Founded by a committee of ladies, on the 17th of March, 1860, the Institution grew year by year, until, in 1864, the Legislature assumed complete control, and appointed a State Board of Trustees.

On December 1, 1865, Mr. Warring Wilkinson, of the New York Institution for the Deaf and Dumb, entered upon the duties of Superintendent, which position he still retains. Since that time the school has experienced many vicissitudes of fortune.

At the Legislative session of 1866, a commission to purchase a tract and erect suitable buildings was appointed. The Commissioners organized on the 10th of April, 1866, and bids for sites were immediately advertised, in various and widely-circulated papers. After mature deliberation, the Commissioners unanimously selected a tract of one hundred and thirty acres, known as the Kearney farm. This site is located on the foothills above Berkeley, four and a half miles to the north of the city of Oakland. It possesses a sulubrious climate, devoid of the sharp winds of San Francisco, and the extreme heat of the interior valleys. It commands a magnificent view of the Bay of San Francisco and the Golden Gate, and its location cannot be surpassed for health, or for the beauty of its surroundings.

A fine stone building was erected, and occupied in the autumn of 1869. This edifice had the misfortune to be destroyed by fire on Sunday afternoon, January 17, 1875. A temporary wooden building was erected on the same site, until an appropriation could be obtained from the Legislature for new permanent buildings. The Legislature, at the session of 1875, set aside \$110,000 for that purpose.

The loss of the previous building, by fire, was deemed of sufficient weight to justify the Board of Directors in adopting the plan of segregated buildings. These were erected upon designs executed by Messrs. Wright and Sanders, of San Francisco. This system permits additions to be easily made to the Institution, as necessity may require. The buildings at present consist of a fine central Educational building,

which contains, in addition to the class rooms, a magnificent Assembly Hall, Library, Art Gallery, and Executive offices. This and all the buildings are constructed of massive red brickwork, upon heavy foundations of blue stone, ornamented with granite abutments, cornices, and sills.

To the rear of the Educational building is the Refectory, containing a great dining hall, pantries, storerooms, and a splendid kitchen. Beneath the Refectory is a fine Gymnasium, fitted with the improved apparatus supplied by Dr. Sargent, of Harvard. These buildings are flanked by four homes, which serve for the accommodation of the pupils and teachers. All are fireproof, and perfect in sanitation. In the rear of this collection is a bakeshop and a cooking school, where the girls are trained in the art of cookery. Near by stands a complete steam laundry, an engine house, and an electric-light plant. Still farther in the background are the carpenter shops, and the printing office, where a weekly paper is set up and published by the pupils. Fine playgrounds, lawns, and flower beds give ample scope for the amusement and delectation of the scholars outdoors. Several large orchards furnish a good supply of fruits, a large kitchen garden supplying its quota of vegetables, while a magnificent herd of Holstein-Jerseys provides the Institution with milk and cream.

The education of the deaf mutes is conducted upon the now generally-accepted Combined System, which includes instruction by the aid of signs and the Manual Alphabet, and also a course of articulation and lip reading. The school course follows very closely that which is pursued in the ordinary public, grammar, and high schools. After graduation, several of the pupils have entered and completed courses in the University.

In addition to the ordinary school work, the Institution possesses all the requirements of a technical Institute. The male pupils receive tuition in carpentering, cabinet work, printing, and gardening, whilst all are eligible for instruction in drawing. One of the graduates has already received high honors in the World of Art. Mr. Douglas Tilden was awarded the certificate of Honorable Mention at the French Salon in 1889. The girls, both the blind and the deaf, take lessons in cookery from a certified instructor.

The blind are trained in piano and organ playing, voice culture, and typewriting. The Institution possesses a great pipe organ, the gift of Messrs. Wright & Sanders, the architects of the buildings. The deaf girls receive lessons in sewing. The pupils have also a perfectly-organized Literary Association, known as the De l'Epee Society, as well as first-class baseball and football clubs. Several scholarships from private

bequests are available for the assistance of deserving pupils.

The past year had a combined attendance of fully two hundred scholars. Mr. Warring Wilkinson, the Principal, is assisted by an efficient and enthusiastic corps of instructors.

The affairs of the Institution are under the management of a Board of Directors, appointed by the Governor of the State, and consisting of W. C. Bartlett, LL.D., President; Rev. J. K. McLean, D. D., Vice President; ex-Governor G. C. Perkins, Messrs. John W. Coleman, Warren Olney, and W. L. Prather, Secretary and Treasurer.

Alameda County is highly favored in having this truly magnificent school, second to none of its kind in the world, situated in its midst; and the Institution offers a strong inducement to parents with deaf or blind children, to make the county their home.

F. O'D.

See plate No. 11.

PUBLIC SCHOOLS.

The pride of the American people is the free public school system. Germany, with its compulsory system of education, under governmental control, cannot compare with the free public school system of the United States. In the matter of education, California, one of the younger States in the great federation, is abreast of the times and behind none of her sisters. This was shown by her teachers and scholars during the visit of the National Educational Convention to California a few years since. Alameda County ranks as one of the highest in the great western commonwealth, both in the examination of its public school-teachers and in the grade of its schools, while Oakland, the county seat, has for years been called the Athens of the Pacific Coast, in deference to its learning and culture. The statistics of the county show that of the census children an exceedingly small per cent do not attend some school—public, private, or parochial.

There are in the county, outside of the cities of Oakland, Berkeley, and Alameda, fifty public school districts, governed by Boards of School Trustees chosen by the electors of the districts. In round numbers there is an aggregate number of eight thousand school census children in these districts. The enrollment in the public schools in these outside districts shows about eighty per cent, with an average daily attendance of sixty per cent. In these districts there are three Union High Schools, created under an Act of the State Legislature of 1891. Number One of

these is located at Livermore, Murray Township, and embraces advanced pupils from nine school districts. Number Two is at Centerville, Washington Township, and includes ten school districts. Union High School, Number Three, is located at Hayward, Eden Township, with six school districts. In nearly all the schools are grammar grades. Eight of them have more than three departments and seventeen of them have more than one department. There are grammar grades in upward of forty of them. School is maintained in all for ten months in each year. The average salary paid to teachers is \$70 per month for the ten months. The number of teachers in the fifty public school districts is one hundred and twenty-two.

The present revenue of the public schools of Alameda County, as given by the County Superintendent, George W. Frick, and City Superintendents, J. W. McClymonds and D. J. Sullivan, of Oakland and Alameda, is as follows:—

Localities.	County Tax.	State Tax.	District Tax.
Oakland	\$ 50,984	\$146,881	\$112,526
Alameda	12,004	34,176	20,446
Berkeley	6,079	17,020	.....
Outside	34,289	100,867	49,178
Totals	\$103,356	\$298,944	\$182,250

The total expenses for the past year for the public schools of the county were as follows:—

Oakland	\$319,734
Alameda	81,873
Berkeley	24,919
Outside districts	137,492
Total	\$564,018

The school tax rate for the county was ten cents on the \$100 valuation. The Oakland rate was twenty-seven cents additional, which includes five cents for school bond redemption and interest.

Every school district in the county has a school lot and building, and seventy-five per cent of these are above the average country schoolhouses, being good buildings with large ornamented grounds. Ten or twelve of the schoolhouses are almost entirely new and are of the most modern construction. Only about a dozen are small structures, unadorned and with un-ornamented grounds, and these will not long remain so, as the matter of larger grounds and new buildings is being agitated. The total aggregate value of the real property and improvements in these outside districts is \$284,924. Over every district schoolhouse, or from a flag pole in their yard, floats the stars and stripes, and the children are taught loyalty to the government under which they live. Each school district has a library, and a certain amount of the annual tax is set aside for additions to the libraries.

The annexed table shows the value of the school property of the county up to January 1, 1893, including real estate and improvements, libraries, and apparatus.

Localities.	Real Estate and Improvements.	Libraries.	Apparatus.
Oakland	*\$492,040	\$ 3,300	\$6,000
Alameda	190,000	900	989
Berkeley	25,000	275	250
Outside	262,205	14,509	8,210
Total	\$969,245	\$18,984	\$15,469

*NOTE.—The improvements in the Oakland school property during 1893 will bring its value up to about \$1,500,000.

The total value of the school property in the county is:—

Oakland	\$1,001,340
Alameda	191,889
Berkeley	25,525
Outside districts	284,924
Total	\$1,503,678

PRIVATE INSTITUTIONS OF LEARNING.

There are a number of private educational institutions in Alameda County, where collegiate and academic educations may be obtained by those desiring to send their children to these institutions rather than to those of the State or county.

Prominent among them is Mills College, founded nearly thirty years ago, by the late Rev. C. T. Mills, D. D., and his wife, Mrs. Susan L. Mills, as a seminary for young ladies. It is situated on extensive grounds in Brooklyn Township, about five miles east of the center of Oakland, and is reached by two lines of steam railroad, as well as by an electric street railway. In 1877 it was endowed largely by Dr. Mills and Mrs. Mills and incorporated as a college, and its property is held by a Board of Trustees, for the Christian, but unsectarian, education of young women. Its curriculum embraces the usual college courses. Its graduates number hundreds and are settled all over the Union as well as in other lands. The annual attendance is about two hundred. It has been under the management, since the death of Dr. Mills, principally of Mrs. Mills, with the trustees. She is now the President of the Institution.

At Irvington, on the line of railroad between Oakland and San Jose, and within about a mile and a half of the old Mission of San Jose, the site of the first Spanish and American settlement in the county, is the Washington College for boys and girls. It includes a preparatory and a commercial department, as well as the collegiate. For a time it was under the control of the members of the Christian Church

and its teachings were slightly sectarian in that line, but of late years it has been unsectarian, while evangelically Christian in its teaching. Its attendance has been from one hundred and fifty to one hundred and seventy-five.

At Livermore is situated the Livermore College, an institution similar to the one at Irvington, for the education of both sexes. It has an annual attendance of about one hundred and twenty-five and graduates a class every year, many of the graduates being from distant points. It is under the superintendence of Professor J. D. Smith, who is the President of the College.

Within the boundaries of the City of Oakland are a number of private educational institutions. One of the oldest of these is the Field Seminary, on Telegraph Avenue, established by Miss Harriet Field in 1870. It is called a home school for girls. It is now under the principalship of Mrs. W. B. Hyde.

The Snell Seminary, on Twelfth Street, near Clay, is also a school for young ladies that is very popular and annually graduates a large class of young women prepared for the active duties of life. Richard B. and Miss Mary E. Snell are the principals.

A school for young men is that of the Hopkins Academy, under Professor W. W. Anderson, as principal. It is situated between Thirty-second and Thirty-fourth Streets, New Broadway, and Telegraph Avenue. The graduates are admitted to the State University without entrance examination. It was endowed by the late Moses Hopkins some years ago and Mrs. Hopkins promises another endowment. The trustees are looking for a larger site.

The Pacific Theological Seminary, the denominational school of the Congregational Churches of Northern and Central California, for the education of young men for the ministry, is also situated in Oakland, on grounds adjoining the Hopkins Academy. It has a full faculty and contains the usual chairs of such an institution, and each year graduates a class of young men fully equipped and prepared for the Christian ministry. During the present year efforts are being made to increase the endowments and facilities of the Seminary.

About twenty-eight years ago Archbishop Alemany, of San Francisco, founded a school for boys, which was carried on by the clergy of the church, under his supervision, for eight or ten years. It was then transferred to the care of the Order of Christian Brothers, and was conducted by them in the outskirts of San Francisco, near the Mission road. In 1888 the cornerstone of a new structure was laid on New Broadway, Oakland, and a magnificent building, complete in all

its appointments, five stories in height, erected. In 1891 the school was transferred to this building. Its curriculum embraces the usual classical, scientific, and literary college courses. There is also a preparatory school and commercial course. An exhibit from this college and model of the building is on exhibition at the Columbian Exposition.

The California College, at Highland Park, Oakland, is the denominational college of the Baptist Church. It is also a preparatory school for the denominational theological seminary. It has the usual academic and college courses.

Aside from the colleges, seminaries, and academies mentioned, there are also two commercial colleges, where special education is given for commercial business. One of these is the Oakland Business College and Institute of Penmanship, on Clay Street, near Eleventh, conducted by Professor O. J. Willis. The other is situated on the second floor of the Young Men's Christian Association building, at Clay and Twelfth Streets, conducted by Professor J. H. Aydelotte. Both these schools have large classes in the usual commercial school courses.

CHAPTER IV.

MANUFACTURING INDUSTRIES.

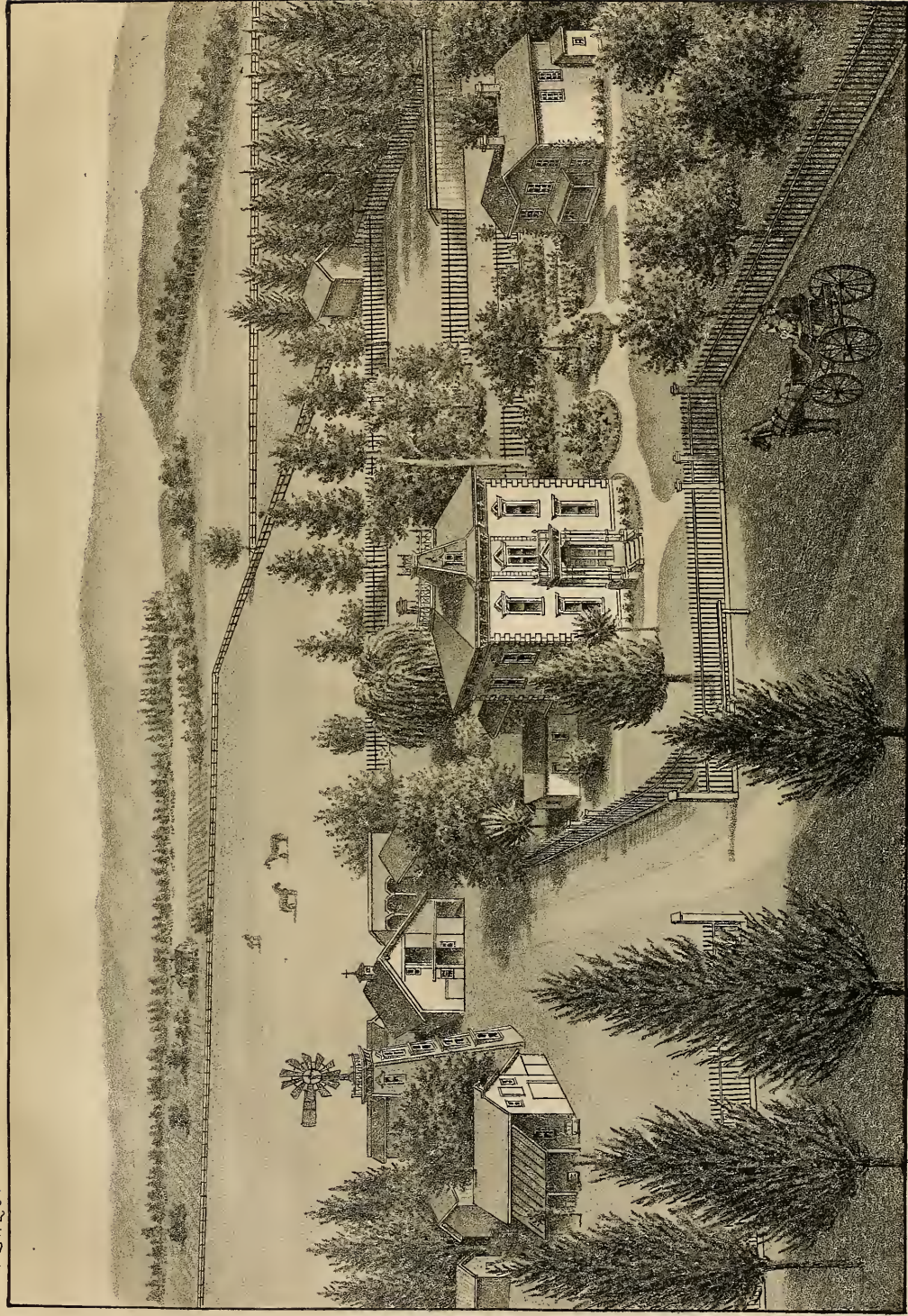
Salt Works—Beet Sugar Factory—Soap, Iron, and Nail Works—Car Works—Agricultural Works—Oil Refineries—Paint Works—Cotton, Jute, Planing, and Flouring Mills—Tile, Terra Cotta, and Art Pottery—Brick Yards—Tanneries, etc.

Nowhere on the Pacific Coast is there a situation better adapted to the erection and carrying on of all kinds of manufactures than on the Alameda County shores of the Bay of San Francisco, and along the banks of the estuary of San Antonio, or Oakland Creek. This has been exemplified already by the several industries already carrying on works on these shores, and there are still hundreds of locations suitable, and with the rapid growth there is no doubt that many more of these sites may soon be occupied. They are near rail transportation, as well as being close to deep water, thus handy for shipping to the interior or east, as well as loading on vessels for coast, Mexican, South American, Hawaiian, Australian or Oriental ports. A brief account will be given of some of the manufactories and works already established. Some of them have been in successful operation a number of years.

MANUFACTURE OF SALT.

A Pioneer Industry of Alameda County and of the State.

Alameda County is the pioneer of the Pacific Coast in the salt industry and is now the principal place



where salt is gathered in California. As early as 1850, at New Haven, now Alvarado, salt deposits were gathered, and for a long time the entire commonwealth depended upon it for the supply. Its output now is very large and last year aggregated thirty-seven thousand eight hundred and fifty tons or thirty-seven million eight hundred and fifty thousand pounds. There are no less than eighteen different salt beds along the shores. Of these that of the Solar Salt Company of B. F. Barton is shown in plate No. 21 of this album. There was gathered at these beds last year two million five hundred thousand pounds of salt. His works are at Alvarado, and near his works, at the same place, are four others, making from five hundred to fifteen hundred tons annually, or an aggregate of fifty-six hundred tons. At Newark there is only one firm engaged, but it gathers and prepares for market four thousand tons of salt. At Russell's Station two thousand two hundred tons are gathered up by three persons. At Mount Eden the largest quantities are gathered, one company preparing twelve thousand tons annually, another five thousand, and several two thousand tons. At this place last year twenty-two thousand tons or twenty-two million pounds were gathered up and prepared for market.

During the salt season over two hundred laborers are employed; one steamer and seven sailing vessels are kept busy transporting the salt from these beds, which range along the shore for nearly eight miles. This salt is sold at prices ranging from \$7.00 to \$14 per ton, and that which is refined by the larger companies is held to be equal to the best Liverpool salt. In passing along the railroad between San Leandro and Newark it is an interesting sight to see the great white pyramids along the bay shore. The process followed is that of spontaneous evaporation of the water of the Bay of San Francisco similar to that used on the shores of the Mediterranean. A large piece of land varying from one to several acres barely above high-water mark is leveled, and in some instances puddled with clay so as to prevent the water from percolating and sinking away. A reservoir is constructed alongside also rendered impervious, in which the water is stored and allowed to settle to a certain extent.

The prepared land is partitioned off into large basins or setting reservoirs, and others, smaller in size and more shallow, to receive the water as it becomes more and more concentrated, sufficient fall being allowed from one set of basins to the other to cause the water to flow slowly through them. This sea salt, after the water has been all drained off, is then col-

lected into small heaps or rows from the surface of the beds by means of a wooden scoop or scraper, and is allowed to stand for a time where it undergoes a first partial purification, the more deliquescent salts (especially the magnesium chloride) being allowed to drain away. From these small heaps and rows it is gathered into larger ones or pyramids, where it drains further and becomes more purified. Some of the larger companies make a refined product by taking it to the refinery, where it is either washed and stove dried, or dissolved in fresh water and then boiled down and crystallized like that made from the rock salt brine, but the most of it goes into commerce just as it comes from the large heaps and pyramids at the salt beds.

The Solar Salt Works shown in plate 21 have seven hundred acres of marsh land, divided into reservoirs, settling ponds, and crystallizing vats. The capacity is five thousand tons yearly of crystalline salt.

MANUFACTURE OF SUGAR FROM BEETS.

The Pioneer Beet Sugar Factory of the United States, Located in Alameda County.

The pioneer beet sugar factory of the United States was erected at Alvarado, Alameda County, California, in 1869, with a capacity of sixty tons of beets daily. After running four seasons, at a great loss, the machinery was removed and re-erected at Soquel, Santa Cruz County, and run two or three seasons at a loss, when it was closed down. In 1879 another factory was erected at Alvarado by E. H. Dyer & Co., for the Standard Sugar Company, and E. H. Dyer appointed General Manager. It commenced operations in the fall of that year. Its daily capacity was eighty tons of beets, and its cost about \$300,000. In the first four seasons a net profit of \$103,349.63 was made. This factory was run eight seasons, when the works were destroyed by a boiler explosion. Owing to the low prices of sugar, the profits the last four seasons were very small.

In the year 1889, E. H. Dyer & Co. erected another factory at Alvarado, which is still running. It was incorporated under the name of the Pacific Coast Sugar Company, and had a daily capacity of one hundred and fifty tons of beets. In 1890 a controlling interest was sold to San Francisco capitalists, who re-incorporated as the Alameda Sugar Company and enlarged the works to a daily capacity of upward of two hundred tons of beets. The cost of the present works was about \$350,000. The officers of the company are: John S. Howard, President; James Coffin, Secretary; E. C. Burr, Manager, and J. W. Atkinson, Superintendent.

There are hundreds of acres in Alameda County suitable for the cultivation of the sugar beet for profit. It demands a soil easy to till, one that is loose and pliable, but not too sandy. It also requires proper preparation before and cultivation and care after planting. The best results have been obtained by a deep plowing a month or two previous to seeding, say twelve or fourteen inches, or with two plowings, the first about nine inches and a second subsoil plowing of six to eight inches deeper. The plowing is done in the early winter so that the atmospheric influences destroy the cohesion of the soil and at the same time kill any insects that may be present.

The reason for the deep cultivation is that the point of the beet root may penetrate the earth deeply without resistance, so as to produce as few rootlets as possible, and form a beet of good size and conical shape. It also allows it to develop without crowding itself out of the ground, producing better in weight and in percentage of sugar. The seeding, done from early in March to May, according to location—upland or lowland—must be carefully done, and the best results are said to be obtained where the seed is only covered to the depth of half an inch to one inch. The cultivation of the beet requires the greatest care, both in regard to keeping out the weeds and in working the soil. They mature from August 1 to October 15, according to location and date of planting.

The largest acreage of the sugar beet in Alameda County is near Alvarado, and nearly all the land suitable for its cultivation in that vicinity has been used for the purpose at different periods during the past twenty years, but not all at the same time. It was at first difficult to get the farmers to understand the necessity of careful cultivation (the company does not cultivate the beets, and the consequence was a less price received by them and less percentage in sugar. The average price paid at the Alvarado factory is about \$5.00 per ton. From ten to fifteen tons are produced on an acre, thus averaging from \$50 to \$75 to the farmer, less the expense of farm labor, etc. A few hundred acres were planted to beets near Pleasanton last season and the product was handled at the factory at Alvarado.

The Alameda Sugar Factory at Alvarado turns out, when running full blast, day and night, with two shifts of hands, forty thousand to fifty thousand pounds of white sugar daily. Eighty men are employed in the factory in the various departments, and during the last season, between September 15 and December 25, fifteen thousand tons, or thirty million pounds, of beets were handled, two hundred to two hundred and fifty tons per day, and fifteen hundred tons or

three million pounds of white sugar turned out. The last season was considered a good one for the farmers and the factory. Several tons of beets, grown near Antioch, Contra Costa County, were shipped to the factory at Alvarado last year.

The works are situated on Alameda Creek, a small stream which runs down from the foothills and empties into San Francisco Bay, but is not navigable. It is also on the line of the South Pacific Coast Division (narrow gauge) of the Southern Pacific Company's system.

The process used at the factory at Alvarado is known as the diffusion process. The beets used are a highly cultivated variety of the *Beta Maritima* (sea beet), natural order *Chenopodaceae*, the seeds of which are imported from Germany and France, where the greatest care is exercised in the production, with a view to obtaining beets with the highest percentage of sugar. This ranges from fifteen to eighteen per cent, but the average beets produce from twelve to fifteen per cent of sugar. There are at least fifteen different varieties grown in California, and several of these are shown in jars in the Alameda County Exhibit, as well as the sugar at different stages of its manufacture at the Alvarado factory. The varieties mostly used in Alameda County are the Klein-Wauzeleben, white; Vilmorin, white; White Silesian and Improved Imperial, rose and white.

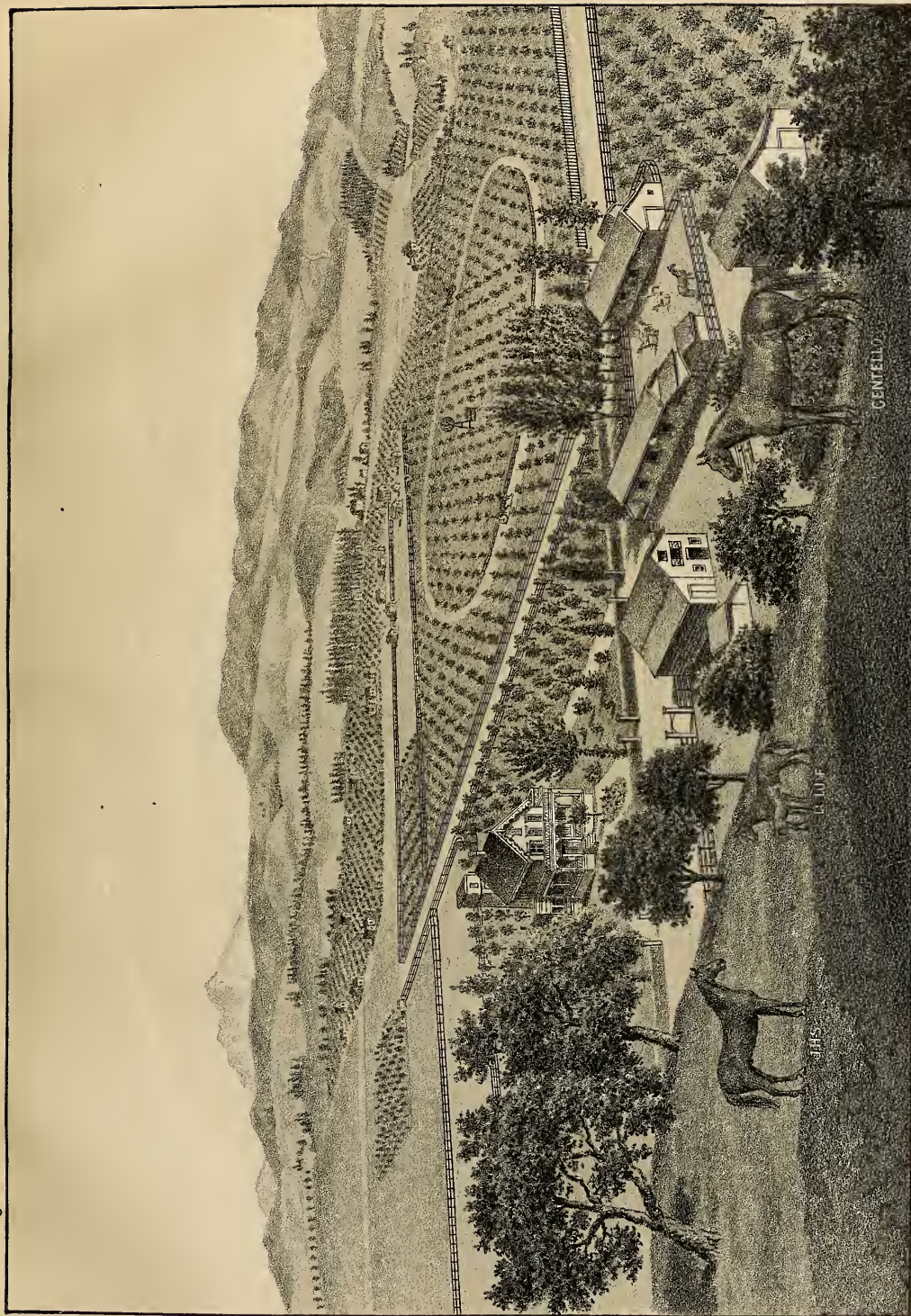
The limit of the average composition of the sugar beet is given below:—

Water.....	Juice.....	84.5 to 70.0
Sugar and other soluble bodies	Solids.	{ 11.5 to 17.0
Cellulose and other solids....		
		4.0 to 4.0

The non-saccharine solids in the juice are very complex, embracing albumen, amido-acids and other nitrogenous bodies, beet-root gum, soluble pectore, compounds, fat, coloring matter, with the phosphates, sulphates, oxalates, and citrates of potash, soda, iron, lime, and silica.

The process of manufacture of sugar from the beet is an exceedingly interesting one, when it is considered that at no period, from the moment the juice is taken from the beet until it reaches the vacuum pan, where it is boiled, does it remain more than five minutes in any one place, but is kept constantly moving. It will sour in less than half an hour if allowed to stop anywhere during the process.

The beets are pulled up and sacked in the field, then hauled in wagons by the farmer to the factory, weighed and dumped in long bin-like sheds, which have a water trough, or flume, running along underneath the center. When the water is turned on, the beets are carried by it into a tank in the lower part of



LAUREL RANCH, RESIDENCE OF J.H. STROBRIDGE, NEAR HAYWARDS.

the factory, where they are washed by a revolving wheel, carried by it to an elevator, which conducts them to the slicing machine, in which a large drum or cylinder, armed with close set rows of blades revolving with great rapidity slices them up into strips about one-eighth of an inch square and differing in length from two to six inches, according to the size of the beet. The slices are then conducted to the diffusion battery, which consists of twelve cells, or diffusers, arranged in circular form, nine being in use, while the other three are being emptied, cleaned, and refilled. A brief description of the diffusion process might well be added at this point. This process for obtaining the juice depends on the action of dialysis, in which two liquids of different degrees of concentration, separated by a membrane, tend to transfuse through the membrane until the equilibrium of solution is attained. In the beet the cell walls are membranes inclosing a solution of sugar. The theory of the process is that if these cells be brought into contact with pure water, and that they contain twelve per cent of sugar, transfusion will go on until an equal weight of water contains six per cent of sugar, while by the passage of water into the cell the juice there is reduced to the same density. Taking the six per cent water solution, and with it treating fresh roots or slices, containing twelve per cent of sugar, a nine per cent solution will be attained, which on being brought a third time in contact with fresh roots, could be raised to a density of ten and five-tenths. According to this, theoretically, seven-eighths of the whole sugar would be obtained at the third operation, and on this is based the process of diffusion.

The diffusers mentioned are large, close, upright cylinders, each capable of holding two or three tons of sliced beets. They are provided with manholes above, perforated false bottoms, and pipes communicating with each other, so that the fluid contents of any one can be forced by pressure into any other. In working the process, pure water from an elevated tank is run into No. 1 cylinder, which contains the sliced beets almost exhausted of their soluble contents; it percolates the mass, and by pressure passes into No. 2, where it acts on slices richer in juice. From No. 2 it goes on through the entire series, acquiring density in its progress, and in each successive cylinder meeting slices increasingly rich in juices. Prior to its entering the last cylinder, the watery juice is heated, and under the combined influence of heat and pressure, becomes richly charged with sugar. No. 1 cylinder, when exhausted, is disconnected, and the pulp passes to a steam press, where all the remaining water is expressed, and it is carried outside

the building and hauled away by the farmers for fodder. No. 2 cylinder becomes No. 1, and a newly-charged cylinder is added on, and thus the operation goes on continuously during the entire season, night and day. It is said that it requires two weeks' instruction to enable a man to properly understand the handling of a diffusion battery.

From the diffusion battery the juice passes into a large tank, where it is heated by steam vapor and passes to the carbolization process, where carbonic acid and lime are added to clarify it. It passes through three of these processes, and after the third carbolization, goes into the filter process, where, passing through three of these, the lime is extracted, and the clear, pure, but thin and watery juice is carried into a series of closed vessels, or tanks, called the quadruple effect, where it is thickened. These tanks are provided internally with a series of closed pipes for steam vapor heating, the steam passing by a pipe from the first one into the worm of the second and so on to the third and fourth. The thickened juice passes from the fourth tank of the quadruple effect into a reservoir and from there is drawn into a large closed tank on the fourth floor of the factory, called the vacuum pan, in which it is boiled about four hours at a low temperature. This pan is a closed globular vessel, in which by the aid of a condenser and air pump, a vacuum is maintained over the boiling juice, and the boiling point is lowered in proportion to the decrease of air pressure. This immense vessel will hold about thirty tons of the thickened juice. When it has been sufficiently crystallized, the boiled-down juice, being a grainy mass of crystals floating in fluid syrup, then called "magma," is transferred to the mixing pans, which are kept constantly moving to prevent solidifying, and from these is fed into the drums or buckets of the centrifugal machines.

A small quantity is dropped into these machines and they are set in motion, revolving at a high rate of speed, which separates the crystals and sirup, the latter being driven through the meshes of the basket, while the crystals remain on the meshed walls. For the further cleaning of the sugar crystals, water is sprinkled upon them from a hose while the machine is in motion. The sirup is returned for reboiling and the sugar passes into receptacles, from whence it is conducted to the drier, a revolving steam drum, and comes out a pure, dry, granulated white sugar, which is placed in one hundred pound sacks or in barrels for the market.

From the second boiling of the sirup, a brown sugar is made, but it is in turn worked over and manufactured into white. The final molasses, or tailings,

is a highly impure mixture of crystallizable potash and other salts, smelling and tasting strongly of its beet origin. No attempt is made at the Alvarado factory, on account of the high price of fuel, etc., to recover the large amount of sugar, forty to fifty per cent, contained in this molasses, though in Germany and France several methods are employed, one being by fermenting and distilling from it an impure spirit for industrial purposes.

In the process a great deal of lime is used, and the company burn their own limestone, using fifteen tons daily at their kiln.

THE ALAMEDA BORAX REFINERY.

A Pacific Coast Product Prepared for Market in Alameda County.

At Alameda Transfer, a little railroad station upon the Bay of San Francisco, the Southern Pacific Company switches onto the side track of the Pacific Coast Borax Company's Refinery not less than seven or eight car loads of fifteen tons each of crude borax every week in the year. At a similar rate the refined product is reshipped either by car or upon schooners from the end of the little wharf. During the period of detention of this material at the works, an interesting chemical romance has been enacted. "It is a story of fickle affinities, wherein, as often happens with such affinities elsewhere, the two fickle ones unite in a waste combination, while the deserted ones get together and make a respectable and valuable product."

The rough, broken masses of brown colored rock, a borate of lime, have been transformed by the agency of mechanical energy, and the wonderful alchemy of chemistry into beautiful, translucent crystals of pure borax, a staple product known to every druggist and grocer, and coming into use in every household.

Borax is distinctively a Pacific Coast product, being found nowhere else in North America. Since the important discoveries in 1873, California and Nevada have furnished an ample supply for the domestic consumption. This has steadily increased from five million pounds in 1876 to fourteen millions in 1892, or more than doubling every ten years.

It is to the credit of the Pacific Coast producers that the price has steadily declined, till now borax is not only within the reach of all, but one of the cheapest articles of household economy. This is the more important as wherever used it seems to become indispensable.

The most noted region yielding this valuable staple is the world-renowned Death Valley, in Inyo County.

This valley lies two hundred feet below sea level, and is intensely hot and dry, though not necessarily as deadly as has been supposed. Borax deposits are usually thinly spread over the surface of low ground. The Death Valley deposit extends upon higher ground, and the later sources of main supply are deep beneath the surface. At Calico, near Dagget, in San Bernardino County, the borate of lime is found in ledges or veins of crystal, which require mining and pulverizing before the borax can be separated from the residuum.

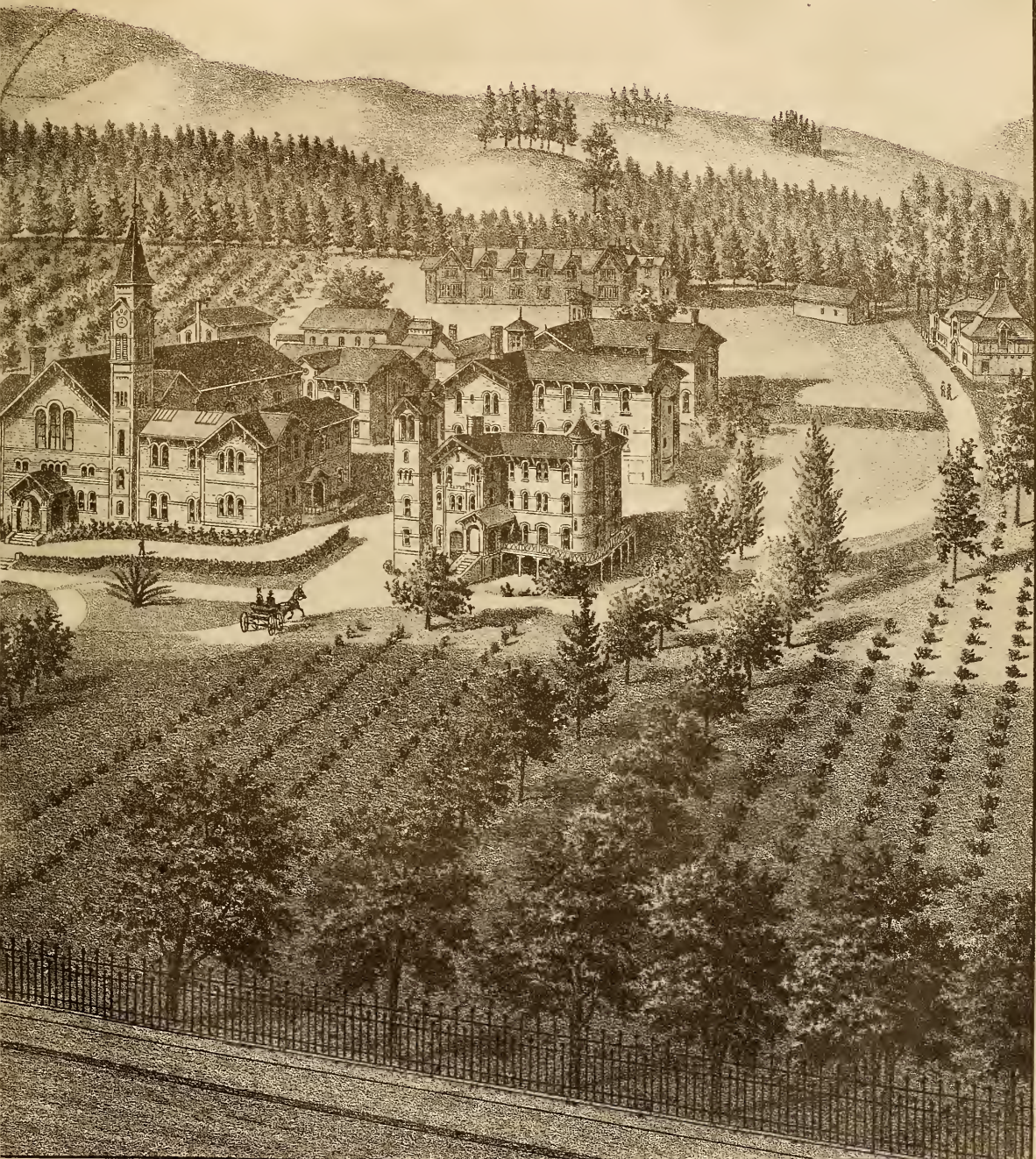
The Alameda Refinery is an interesting establishment for two reasons: First, the fact that it is the only borax refinery on the coast, and probably the largest in the world. Second, the fascinating character of the mechanical and chemical processes there carried on. The purity of the article and cleanliness of all the operations give the factory somewhat the character of a flouring mill. The crude material passes first through rock breakers, then to mills, rolls, and burr-stones, till finely pulverized. It is then, with a small portion of carbonate of soda, also a product of the deserts of California, thrown into an immense steam chest, or pressure boiler, called a digester, probably the hughest stomach now known, where, under heat, pressure, and agitation, the existing affinities are completely upset. The carbonic acid drops the soda, and unites with the lime, which yields its boracic acid. The latter quickly unites with a small portion of the soda, and we have a bi-borate of sodium, the chemist's name for borax. It is yet, however, in solution, and must be drawn off into large tanks to crystallize. Here the pure product forms by successive crystallizations upon thousands of tiny steel rods, as rock candy crystallizes upon a thread. This process is repeated until a proper degree of purity is reached, when the refined borax is ready for market, though powdered for many uses.

The meat packers of the Great West consume large quantities in the dry packing of meat for export. Some fifty mechanical industries employ borax, but we are told the largest use is in the household, for the toilet, nursery, kitchen, and laundry, where its innocence and purity render it as safe as it is effective and economical for cleansing and preserving.

Few travelers passing in sight of the borax works realize either the interesting nature of the manufacture or the immense quantity of this staple turned out. The year's output would load a train of five hundred cars with ten tons each. If packed in the neat paste-board packages on sale everywhere, labeled "Pure Borax from the Deserts of California and Nevada," and these were laid in a single line so as to touch, it would stretch out seven hundred miles away.



CALIFORNIA DEAF, DUMB AND BLIND



ND INSTITUTION, BERKELEY, CAL.

PACIFIC COAST OIL WORKS.

Extensive Plant for Refining the Crude Petroleum Found in California.

On account of the nearness to market and railroad facilities the Pacific Coast Oil Company's Works were established on Pacific Avenue, Alameda. The works are extensive and cover a large tract on the bay shore. The plant consists of thirty-five tanks, two of which hold forty thousand barrels, and the remainder from seventy to two thousand barrels each. The agitators, one for treating illuminating oils, holding one thousand barrels, and two for treating lubricating oils, holding one hundred and thirty barrels each, two bleaching tanks of one thousand barrels each, eight lubricating settling pans, two sixty-inch boilers, sixteen feet long, eight pumps for conveying the fluids from tank to tank and for shipping, each pump having a capacity of from one hundred and fifty to five hundred barrels an hour, one air compressor, one air blower for agitating, a canning factory, turning out fifteen hundred five-gallon cans per day. The filling capacity of the establishment is one thousand cases, or two thousand five-gallon cans a day. The oil is supplied from wells in Los Angeles County, and is conveyed to the works in tank cars. There are sixty of these cars, each tank containing from four thousand to six thousand gallons. The products of the works include, in finer qualities, gasoline, naptha, lucine, benzine, Water White illuminating oil, and Standard illuminating oil, besides gas oil, paraffine, lubricating oil, locomotive oil, car oil, cylinder oil, engine oil, and a dark green lubricating oil. A view of these extensive works is given in plate No. 28.

STANDARD SOAP WORKS.

The Largest Manufactory for Laundry and Toilet Soaps West of the Mississippi.

An important industry of Alameda County is that of the manufacture of soaps from the immense amount of tallow produced in the slaughter houses at the stock yards, near Berkeley. The Standard Soap Company's works, at Posen Station, West Berkeley (so named by the actor M. B. Curtis, known as "Sam'l of Posen," who owned considerable property and built a passenger depot there), were built several years ago and comprise an extensive plant covering a block of ground. They are on the Southern Pacific overland line and on the shore of San Francisco Bay. It is the largest establishment of the kind west of Chicago, and has a capacity of one million pounds of soap per month. It runs the entire year and employs thirty-five men in the making of soaps, candles, and refining

of glycerine, with ten girls as packers. Of laundry soaps one hundred and thirty different kinds are made, with several kinds of washing powders or compounds, and three hundred different kinds of toilet soaps are turned out, including shaving soaps and floating soap for the bath. The latest processes and machinery are used. One of the features is a complete printing office, furnished with all kinds of type, and three cylinder presses, which print all the labels used, even to the fancy wrappers for the finest soaps.

The laundry soaps are made by different processes from tallow and resin, with other ingredients, the cooking all being done by steam. The toilet soaps are principally made from cocoanut oil, which is expressed from the cocoanuts grown on the islands of the Pacific and refined in San Francisco. The kernel of the cocoanut is sent in a dry state and is called "copra." This is what the kernel was originally called after the oil was expressed. This dried kernel retains the oil and is not so bulky as the nuts themselves. It is put through some steam process and the oil expressed. The laundry soaps at the Standard Works are cooked in six pans or kettles, two of them having a capacity of one hundred and thirty thousand each, and the other four together one hundred thousand, making three hundred and sixty thousand pounds at one boiling. The tallow is melted out of the barrels on the fourth floor by steam jets and runs down into the kettles. The caustic lye or potash is also melted by steam and boiling water and runs by pipes into the kettles. After the boiling the underlie or by product of crude glycerine is drawn off and refined for the giant powder factories at thirty specific gravity, and a still finer quality absolutely pure put up for druggists' use. After the laundry soap is boiled sufficiently, it is run into large molds to cool and comes out of these in blocks of nine hundred pounds weight each, the different kinds being boiled, of course, on different days in different kettles. These blocks, twelve by thirty by thirty-six, are cut into cakes by power, four men handling and stamping eighty blocks, or seventy-two thousand pounds, per day and putting the cakes on racks to season, from which when dry they are wrapped and boxed. Several qualities are pressed after being cut into cakes, one especially being subjected to steam pressure. This is claimed to be equal to Babbitt's.

The toilet soaps are boiled in eight "jacketed" kettles, holding an aggregate of six thousand pounds, and the "floating" soap is also boiled in a different kettle, and by a different process. These soaps are run into molds similar to the laundry soaps, but they come out in white blocks like marble. These are cut

up into bars, and the bars, three-fourths by two inches, are put through the "chipping" machine, which shaves them up into thin chips, after which they are placed on tables to dry. When sufficiently dry these chips are taken to one of the eight "mixing" machines, where the perfumery and the coloring matter desired are added. After passing from the mixing machines it is put through one of two mills, with polished granite rollers, from which it comes out in a thin sheet about two feet wide. It is then passed through one of the two "blotters," or the hydraulic ram, from which it comes out in a long bar, the shape of the bar being determined by the diaphragm used—round, square, octagon, etc.—and is then cut up in cakes and put through one of the four presses that have changeable dies, making the numerous shapes and styles of cakes. They are then put upon racks to dry, and are afterward appropriately wrapped and placed in pasteboard boxes by the one-quarter, one-third, and one-half dozen, according to the style, etc., and are ready for the market.

The glycerine and candle works are in a building adjoining the soap works; the tallow is run from pipes in the upper story of the latter to the tanks in the former, where it is boiled in a vacuum and all the oil run off, leaving the stearine almost free. This is put in quantities of about five pounds into coarse sacks about six inches wide by eighteen long and subjected to hydraulic pressure. These sacks are then still further subjected to steam pressure, where jets of steam are injected into the stearine and the remainder of the oil is expressed. The stearine is then melted and run into the molding machines, holding one hundred or more candles each. The best quality are dried and bleached in the sun.

There is in connection with the works a complete box factory with machinery for making boxes from the rough lumber, but this is not done, as it is cheaper to purchase the lumber from the sawmills in the interior already surfaced and cut into box length, ready to be put together. The lumber is easier stored and seasoned, requiring less room, and is transported with less trouble. This lumber is stored in a fireproof building. There is a machine in the box factory for printing on the wood. Besides the various departments already mentioned, there are store rooms for the soaps, oil, tallow, and resin, label rooms, shipping rooms, etc. The supplies are received and the products shipped away by rail, a switch running alongside the works.

The output of the Standard Soap Company, aside from the local consumption, is sent all over the Pacific Coast and to Pacific Ocean ports in Mexico, Central

and South America Australia, Hawaiian Islands, and to the Orient.

IRON WORKS AND ROLLING MILL.

A large plant at Emeryville, Oakland Township.

One of the most important manufacturing plants in Alameda County is that of the Judson Manufacturing Company, just outside the city limits of Oakland, at Emeryville, on the line of the Northern Railway—a leased line of the Southern Pacific Company. It is situated on the shore of the Bay of San Francisco, and has a frontage on the railroad of one thousand three hundred and eighty-four feet. It is one of the largest factories of the kind in the United States, and employs in the busiest season four hundred persons; from one hundred and seventy-five to two hundred are employed during the entire year. From \$15,000 to \$18,000 are paid monthly to the employees, the wages running from \$60 to \$200 per month. The plant includes a rolling mill, machine shop, agricultural machine works, iron and steel bridge works. Nearly all the ironwork used in the construction of the public and large business blocks in Oakland, Alameda, and Berkeley, as well as in many of those in San Francisco, was turned out at these works. Ten thousand tons of iron are rolled annually. The rolling plant consists of mills of different sizes, with full sets of rolls for turning out all sorts of ironwork. Forty tons of iron are turned out of the furnaces daily during the busy season. The annual output is nearly three-quarters of a million dollars and is increasing steadily.

BRIDGE BUILDING INDUSTRY.

On account of the mountainous character of a large portion of the commonwealth of California, many bridges are necessary, and one of the leading incorporations in this industry is the California Bridge Company, with works at Emeryville, in conjunction with the Judson Works. The bridge company puts up from thirty to forty bridges annually, its work not being confined to California, but many of the bridges crossing streams in other States and Territories, and a number of them are models of engineering skill. Its bridges are of wood, iron and steel. The bridge over the Feather River at Gridley, Cal., built by this company, has a span of three hundred and thirteen feet. That over the Mad River, in Humboldt County, is said to contain the longest timbers in one piece in the world, the chord sticks being one hundred and forty-seven feet long and cut out of mammoth trees of the *Sequoia gigantea*. The California Bridge Com-



E.S.DENISON'S, ALMOND ORCHARD, NILES .



E.S.DENISON'S FRUIT ORCHARD, NILES.

pany has also erected several bridges across the San Joaquin, Russian, and other rivers in California, as well as in Oregon, Washington, Arizona, New Mexico, Idaho, etc. These bridges have been erected on both county and railroads. The company has constantly in employ from one hundred to two hundred and fifty men.

NAIL WORKS.

Another industry of considerable magnitude is that of the Pacific Iron and Nail Company, occupying a tract of fourteen acres at the foot of Market, Myrtle, and adjacent streets, Oakland. This plant was established about the same time the Judson works were. The capacity of the factory is about sixty-five tons of iron and steel daily. It comprises a rolling mill, machine shop, and nail factory. The output is about thirty thousand kegs of nails per month. This is several thousand kegs above Pacific Coast consumption, but they are disposed of by export to South America, Hawaii, etc. The machinery is of the latest pattern and designs. The plant cost over half a million dollars; nearly three hundred hands are employed, and the pay roll is about \$20,000 per month.

CALIFORNIA COTTON MILLS.

In 1885 the California Cotton Mills Company erected a plant for the manufacture of cotton. It occupies a block of 450 feet on the line of the railroad at Twenty-third Avenue Station, East Oakland. The machinery is of the most improved kind and cost about a half million dollars. Various kinds of cotton goods are manufactured, including seamless bags for grain, flour, alfalfa, salt, coffee, toweling, bolting for batting and mops, carpeting, burlaps, cotton wicking, warps, twines, and common rope. The goods manufactured are equal to any manufactured in this country or imported.

MANUFACTURE OF JUTE.

The California Jute Mills were built at Clinton Station, Oakland, on the north arm of the estuary, in the seventies, but in 1883 they changed hands and were extensively improved, new machinery added, and the capacity enlarged. They cover an entire block of ground and give employment to upward of four hundred men, boys, and girls, with a pay roll of about \$10,000 monthly. Nearly one thousand bales of jute are monthly manufactured into burlaps for grain, potato, flour, and borax sacks, twines, jute matting, horse blankets, etc. There are three thousand spindles in

the mill and one hundred and thirty-five looms. There are two hundred and fifty machines in the factory, and the cost of the plant was \$250,000.

CAR SHOPS AT NEWARK.

At Newark, on the line of the South Pacific Coast Railroad, in Washington Township, are situated the large car shops of Carter Bros. This firm turns out annually hundreds of street cars—electric, cable, and horse—as well as railroad cars for different lines on the coast. A large force of workmen is constantly employed and all work turned out is first class.

AGRICULTURAL MACHINE WORKS.

At San Leandro, in Eden Township, are situated Best's Agricultural Machine Works, where are manufactured combined harvesters, threshing machines, and traction road engines capable of drawing fifty tons. These machines and engines are sold and used all over the Pacific Coast, and the plant turns out a large number every year.

BRASS FOUNDRY.

At the corner of Washington and Fourth Streets, Oakland, is situated the brass foundry of A. Chloupek, where are turned out all kinds of brass castings and fixtures.

SEWER PIPE AND FIRE BRICK WORKS.

In 1888 N. Clark & Sons removed their sewer pipe and fire brick works from Sacramento to Alameda Point, on account of better facilities offered by the change of location. They purchased a tract of eight acres of ground, constructed one thousand two hundred feet of side tracking, and erected a handsome four-story brick building, one hundred and ten by two hundred and sixty-five feet. There were used in the construction of the building one million red bricks, the floors having an area of one hundred thousand square feet. The power is furnished by a one hundred and fifty horse power Atlas engine, and the boiler rooms contain two sixty-inch steel boilers. The dry and wet pan system is used in mixing and grinding clays for sewer pipe, fire brick, terra cotta, drain tile, fireproofing, and other products of the manufactory. The facilities are such that from the moment that the clay is unloaded from the cars it is not handled again by the workmen until it comes from the various machines, ready to go on the drying floors, and thence, after they are thoroughly dried, to the kilns. A specialty of this factory is the "Pacific" fire brick, an

article that has the highest reputation and is preferred to the best English brick. The finest machinery and the most substantially constructed kilns are in operation in this factory, and only first-class work in every department is allowed to be placed on the market. As a consequence, this pottery has secured a reputation second to no other establishment of the kind on the Pacific Coast, and enabling them to compete with the highest grade of manufactures turned out by Eastern and foreign establishments of a similar character. Only the best quality of material is used in the manufacture of products of this pottery. Their facilities for making shipments by rail and water are such that their products are distributed all over the Pacific Coast. The pottery turns out annually seven hundred and fifty thousand fire bricks and one million feet of sewer pipe, conduit pipe, and drain tile.

POTTERY AND TERRA COTTA.

On the line of the local railroad, at Twenty-third Avenue Station, East Oakland, is located the large plant of the California Pottery and Terra Cotta Works. About one thousand tons of clay are used annually in the construction of sewer and chimney pipe. The capacity of the plant is one thousand joints of pipe per day, and, when running at full capacity, five thousand are constantly drying in the kilns. All kinds of terra cotta work are turned out, as well as glazed pipe work. The pottery makes a specialty of filters and cane and umbrella stands.

ART POTTERY.

Adjoining the California Pottery, but an entirely different concern, is the Oakland Art Pottery. It makes a specialty of art pottery, including vases, plaques, tiles, etc., and has a kiln for firing hand-painted china, etc. Sewer pipe in large quantities is turned out at this pottery. The output annually is about \$125,000.

COMMON AND PRESSED BRICK.

Owing to the nature of the soil necessary for the manufacture of brick, this industry is not very extensively followed in Alameda County, but the Remillard Brick Company has a large brick yard at Pleasanton, at which thousands of brick are turned out annually. The company have other yards, and the aggregate output per annum is between two million and three million common brick, as well as between five hundred thousand and one million pressed brick. The headquarters and office of the company are in Oakland. The average price of common brick is \$9.00 per thou-

sand and that of the pressed, between \$30 and \$40 per thousand. The value of the annual output of the company is from \$250,000 to \$300,000. It employs three hundred men and eighty teams during the entire year, the climate being such that the making of brick can go on as well in winter as in summer. This company has been in business since 1861. It takes contracts for the erection of brick buildings.

WOODWORK AND PLANING MILLS.

There are a number of planing mills in the county that handle annually an immense quantity of lumber for the growing cities and suburbs and towns and villages. It is estimated that between seventy million and one hundred million feet of lumber are used annually in the county. Several of the largest lumber yards carry from three million to four million feet of lumber continually on hand and sell annually from five million to seven million feet.

One of the extensive woodworking industries of Alameda County is the plant of the California Door Company, situated at Wood and Sixteenth Streets, West Oakland, and near the line of the railroad, with side tracks to carry in the lumber and take away the output. The plant cost \$350,000, and turns out one thousand doors per day, besides many hundreds of dozen sash. From two hundred and fifty to four hundred men are employed by the company, the latter number during the busiest season. This factory was opened up in 1888.

The Burnham-Standeford Company runs a large plant on Washington Street, occupying the block between First and Second Streets, known as the Oakland Planing Mills. All sorts of woodwork are turned out, from street cars to doors, sashes, inside and outside blinds, as well as millwork for buildings. It was established in 1868 by O. H. Burnham and W. D. Standeford, but has recently become the property of an incorporation.

From one million five hundred thousand to two million feet of lumber are used annually by the Eagle Box and Manufacturing Company's factory, on Market Street, Oakland. About five hundred thousand to one million feet of spruce lumber are kept on hand all the time, and seventy-five men are constantly employed in the manufacture of boxes for the small fruit farmers of the county and other industries requiring boxes. A large number are manufactured for dried fruits as well as egg boxes. The output annually is from \$75,000 to \$100,000.

The Pioneer Planing Mill, of Hierlihy, Bell & Co., employs forty men and turns out a great deal of mill-



1ST. PRESBYTERIAN CHURCH, 14^{AND} FRANKLIN STS., OAKLAND.

work for exterior and interior of dwellings, stores, etc. It is situated on First Street at the foot of Broadway.

The Independent Planing Mill, of Johnson Bros. & Co., at Brush and Second Streets, Oakland, turns out fifty thousand to seventy-five thousand feet of dressed redwood, sugar pine, Oregon pine, cedar, fir and hard woods. The building of water tanks for windmills is a specialty of this mill.

The Pacific Coast Planing Mill, of Alpheus Kendall, in Oakland, turns out all kinds of mill work in sugar pine, cedar, ash, spruce, black walnut, and maple.

The East Oakland Planing Mills, at East Twelfth Street and Fourteenth Avenue, do the same kind of millwork as those mentioned above, and send their output all over the Pacific Coast as well as to Mexico and the islands. They handle the same kind of lumber the other mills do, and keep a large stock on hand.

Besides the Oakland mills mentioned, which use hundreds of thousands of feet of all kinds of lumber, there are two planing mills in Berkeley and one in Alameda. The West Berkeley Planing Mills, Niehaus Bros., have been in operation seventeen years. The output is about \$75,000 per annum, and upwards of one million feet of lumber are converted into doors, sashes, window frames, brackets, mouldings, mantels, stair work, book cases, church work, tanks, ornamental fences, scroll sawing, turning, etc.

George C. Pape's East Berkeley Planing Mills handle about two hundred and fifty thousand feet of lumber per annum, the most of it for local contractors. All kinds of trimmings and millwork are turned out.

In Alameda the Enterprise Planing Mill converts a large amount of lumber monthly into millwork, such as mouldings, brackets, ornamental facing, door and window frames, scroll and band saw work, and fancy fencing for the local contractors and builders in this little city of pleasant homes and attractive buildings.

FLOURING MILLS.

Among the many industries and mills in Alameda are those for the grinding of her cereal products. Of these the Golden Rule Flouring Mills, at Broadway and Third Street, were erected in 1864, and have a capacity of one hundred and fifty barrels a day. The mill operates eight double sets of Steven's rollers, a smutter, a bran duster, separator, bolts, purifiers, etc.—all of the most improved make. The principal market is in Oakland and San Francisco, but shipments are made to Vallejo, San Rafael, and to Contra Costa County.

The Encinal Home Flouring Mills, at Washington and Fourth Streets, Oakland, include French burr-stones, Wagner rollers, and every description of ma-

chinery necessary for cleaning and separating. The annual output is about \$75,000, and the mill makes a specialty of meals of their own manufacture.

The Bay City Roller Flouring Mills, at First and Clay Streets, Oakland, have a capacity of over two hundred and twenty-five barrels per day. The product of the mills includes the finest grades of flour, oatmeal, graham flour, coarse and fine hominy, corn meal, middlings, bran, pearl barley, and farina.

The Berkeley Milling Company's mills are located at West Berkeley. Their sales amount to upward of \$3,000 monthly, the largest part resulting from the manufacture of breakfast food. The machinery includes steel cutters, breaking machines, separators, bolts, cleaners, and purifiers. The product of these mills is made from the choicest grain grown in this State, carefully prepared and steam cooked by a new process which renders it more wholesome and nutritious. The machinery cost \$10,000, and the output amounts to \$45,000 a year.

TANNERIES.

One of the oldest industries of East Oakland is the manufacture of leather. The Brooklyn Tannery has been in operation since 1870, and was started by the late George F. Crist. It is now conducted by R. F. & A. J. Crist, sons of the former, who were members of the firm prior to their father's death. The output per annum varies from \$90,000 to \$120,000 per year, and represents ten thousand to twelve thousand hides. From \$12,000 to \$16,000 worth of bark is used yearly.

The Oak Grove Tannery, located also in East Oakland; G. S. Derby proprietor, was established in 1860. It works about sixty thousand hides per annum, which represent an output of about \$70,000. Over four thousand sides of leather are constantly in course of tanning. Sixty-eight vats consume six hundred cords of bark every year, and the principal manufacture consists of harness, skirting, and sole leather. The pelts average sixty pounds each. The roller has a pressure of seven thousand pounds. This tannery has a large Eastern trade.

MANUFACTURE OF PAINTS AND OILS.

In 1884 the Paraffine Paint Company located its works near Shell Mound Park, at Emeryville. The company manufactures a paint adapted to the preservation of wood and ironwork, tin, roofs, bridges, etc. The factory turns out fifteen thousand gallons a month, worth, according to quality, from ninety cents to \$1.75 per gallon. Branch houses for the sale of

this paint have been established in New York, St. Louis, and Chicago. The sales of paint alone amount to \$180,000 annually, besides which the company has a heavy demand for a patent waterproof roofing of burlap, backed with paper and coated with paraffine paint, these sales amounting to \$90,000 a year.

The works of the Petrolene Paint Company are situated on First Street, Oakland, on the line of the old overland railroad. The company receives a sort of crude petroleum oil from wells in Ventura County. The lighter quality is sold to the gas company. The heavier parts of tar are used for sidewalks, and the asphaltum for paints. The company manufactures large quantities of waterproof petrolene roofing. The paints manufactured are water and fire proof, and are used for painting ironworks, smokestacks, gas works, roofs and tin, preventing oxidation.

E. G. Buswell & Co. have a plant at the corner of Broadway and Fourth Street, Oakland, for the manufacture of the various kinds of mineral paints, with a capacity of ten tons per month.

CHAPTER V.

RAILROADS IN ALAMEDA COUNTY.

The Terminus of the Transcontinental Lines—Local Passenger Traffic—Street Car Lines Run by Cables and Electricity—Electric Cars Run on the County Roads—Rapid and Frequent Transit from Suburban Towns to the Cities of Oakland and San Francisco—Car Shops, etc.

As all roads during the time of the Roman Empire's greatest success led to Rome, so for many years all visitors to the metropolis of the Pacific Coast by transcontinental travel passed through Alameda County and across the Bay of San Francisco.

The commencement of the present railroad system of the Pacific Coast was the incorporation in 1862 of the Alameda Valley Railroad Company, to build a railroad from Oakland to Niles. This road was built by the Central Pacific Railroad Company some years later and became a part of the transcontinental line over the Rockies. The first railroad, being four miles long, and running from Broadway, Oakland, to the ferry wharf, was operated in 1863. In 1865 this line was extended to Brooklyn, now East Oakland Station, and this was connected with the San Francisco and Alameda Valley Railroad and extended to Hayward and completed. This line was extended during the latter part of this year and the one succeeding to connect with the Western Pacific, a section of the transcontinental line then under construction in Alameda Cañon, and through the Livermore Pass, in the Contra

Costa Range. The Central Pacific Railroad in 1867 bought up the various railway lines and consolidated them, agreeing upon making the termini of all the lines intending to reach San Francisco at Oakland, and crossing the bay from this point. The Central Pacific Company, then building its line to connect with the Union Pacific at Ogden, had also determined at this time to reach San Francisco *via* the Livermore Pass, Alameda Cañon, Oakland, and a ferry system across the bay, and on the eighth day of November, 1869, the first overland train reached Oakland.

Then it became apparent that the metropolis had been founded on the wrong side of the bay—that it ought to have been on the mainland where Oakland now is, with a scope and capacity of containing a city of two million inhabitants, instead of on the peninsula of San Francisco. A line of ferry steamers was put on by the Central Pacific Railroad Company, and a pier built out on piles two miles into the bay, where these steamers landed. Owing to a feeling of distrust expressed by many in reference to the trestle, the company some years ago filled in all around it with earth and stone, making a solid mole extending from the pier to the mainland. The travel and freight traffic became so heavy that the railroad determined to build a line around the bay shore, which it did, to avoid the heavy grades through the Livermore Pass. It also built an immense ferry steamer to cross the Straits of Carquinez for the overland travel *via* Ogden and Omaha. This steamer carries an entire train of sleepers, passenger coaches, dining cars, etc., with the accompanying engine, at one load, the train divided in half. The road *via* the Livermore Pass is now used for local traffic. The trains for the southern routes follow around the bay shore into Contra Costa County and the San Joaquin Valley.

A few years after the completion of the main line the company built a line from Niles down through the southern end of the county, running through the Santa Clara Valley, through San José, to Santa Cruz and Monterey. By a branch line running down from San Francisco to San José, a circuit of the lower end of the Bay of San Francisco—one hundred miles—is made, and freight not desired to be risked on the bay is sent round to San Francisco. "Big Betsy," the immense gun sent out from the East for the warship *Monterey*, was sent around in this way from Oakland. The company have two large steamers, upon which they load a train of freight cars and take them across the bay to San Francisco, and *vice versa*, of freight going east from Japan, China, or other oriental countries, or the Hawaiian and other islands of the Pacific, and Australia. So much for



RESIDENCE OF CHARLES NELSON



SEMINARY AVE., EAST OAKLAND

the overland roads, which were all leased some years ago and are still controlled by the Southern Pacific Company of Kentucky.

About thirteen years ago an opposition company, known as the South Pacific Coast Railroad Company, built and equipped a narrow-gauge line starting from a pier built out into the bay from Alameda Point, along the south training wall of the Oakland estuary, and paralleling the broad-gauge line down through Alameda County and the Santa Clara Valley to San José, Santa Cruz, and Monterey. This line runs between the broad gauge and the bay. In 1887 it was purchased by the Southern Pacific Company for \$5,500,000, and it is now operated by it.

The California and Nevada Narrow Gauge Railroad Company built a line a few years ago from Emeryville, *via* Berkeley and San Pablo, to Walnut Grove, in Contra Costa County, which runs during the summer months. The line is being extended, and it is understood that it will be put through into the San Joaquin Valley in the near future.

The California Railway Company runs a narrow-gauge train from the city line of Oakland at Fruitvale to the foothills at Laundry Farm, being a direct line to Mills College. This company furnishes rock for street macadamizing purposes from its quarries at Laundry Farm.

In 1891 the Southern Pacific Company built a short line from Martinez through to its old overland line near Livermore, opening up a rich farming district to railroad facilities, so that there is scarcely a farm in the county that is not within a few miles of a railroad station and has an outlet to get its products to the local markets.

The following is a chief summing up of the present transcontinental roads, of which the little line of four miles operated in 1863 was the beginning: The oldest of the lines now forming a part of the coast and transcontinental systems is the Central Pacific, leased and operated by the Southern Pacific. This line starts from Oakland pier and connects with the Union Pacific at Ogden. One train leaves Oakland daily, *via* Sacramento, crossing the Sierra Nevada Mountains, *via* Truckee, to Reno, Nevada, where it connects with the line to Carson and Virginia City, and that line with the Carson and Colorado line, through Southern Nevada, Mono, and Inyo Counties, in this State, to the Colorado River. At Reno the Central Pacific also connects with a railway being built northward to Lassen County, and to extend the whole length of Surprise Valley, Modoc County, and into Oregon. At Battle Mountain the Central connects with the Nevada Central Railroad, running from Battle Mountain to

Austin, Nevada. At Palisades the Central connects with the Eureka and Palisades Railroad, and the rich mines of the Eureka mining section of Nevada. At Ogden the Central connects not only with the Union Pacific, but also with the Denver and Rio Grande, the Utah Central, Utah and Northern, and the Oregon Short line—branching to all points of the compass, north, south, east, and west.

Then come the Southern Pacific lines, running also from the pier to the Eastern States through Central and Southern California. Practically, two overland trains leave Oakland over this route each day, as southern connections amount to that. These trains leave Oakland pier, *via* Port Costa, following the San Joaquin River, *via* Lathrop, through San Joaquin Valley to Mohave and the Needles, connecting with the complicated systems of the Atlantic and Pacific Railroad, the Atchison, Topeka and Santa Fé system, the St. Louis and San Francisco system; or *via* Los Angeles and Yuma, connecting with the Maricopa and Phoenix Railway; with the Sonora Railway, at Nogales, to Guaymas; and at El Paso with the Mexican Central Railway, through the Mexican States, to the City of Mexico; or to the Texas border, connecting with the whole Texas and Southern system; or to Galveston and New Orleans, and the great systems of railways traversing with their connections the whole continent.

The third great line leaving the terminus at Oakland pier is the Oregon line, or Shasta Route, as it is generally termed, with its connections, spanning the great Northwest. Daily trains leave the pier *via* Sacramento, Marysville, and Red Bluff, passing at the very foot of majestic Mount Shasta, connecting at Montague, in Shasta Valley, with the line of railway to Yreka; or to the Oregon line, climbing the Siskiyou Mountains, through Rogue River Valley, connecting with the Oregon system of railways; on to Portland, connecting with two lines of the Northern Pacific; to Washington, with its system of railways, and with the Canadian Pacific; through Idaho, Montana, Dakota, with their systems of railways, to the Great Lakes and the East.

The State system of roads connecting San Francisco and Oakland with the remainder of the great commonwealth runs through Alameda County.

Three trains leave Oakland pier daily for Port Costa, Benicia, Suisun, and Sacramento, and intermediate towns, connecting at Sacramento with trains for Marysville, Chico, and Red Bluff, and intermediate towns. Two trains leave daily for Sacramento *via* Livermore, Lathrop, Stockton, and intermediate towns, connecting at Galt with trains for Ione, Amador County, and at Stockton with trains to Copperopolis, Calaveras

County, and intermediate towns; also line to Stanislaus and other counties and the Yosemite. Two trains leave daily *via* Port Costa and Davisville for Woodland, Red Bluff, and Redding, connecting at Williams with trains for Colusa and intermediate towns; also at Woodland with trains for Knight's Landing. Two trains leave daily *via* Vallejo Junction for Napa and Calistoga and intermediate towns, connecting with trains at Napa Junction for Creston, Cordelia, and Suisun. Three trains leave daily *via* Vallejo Junction for Santa Rosa, Sonoma County, and intermediate towns. Two trains leave daily *via* Lathrop, through the San Joaquin Valley, to Los Angeles, connecting with the Southern California network of railways. Two trains leave daily by the narrow-gauge line for Los Gatos, Santa Cruz, and intermediate towns, connecting at Felton with the Boulder Creek and Pescadero line, Big Trees, etc., and at San José with the New Almaden line. Two trains leave daily by the broad-gauge line *via* Niles, San José, and Santa Cruz, Pajaro, Watsonville, Martinez, and intermediate towns, to Paso Robles, San Luis Obispo County, and intermediate towns.

Sacramento trains connect at Elmira with trains to Vacaville, Madison, Rumsey, and intermediate towns. Also at Sacramento with trains to Folsom and Placerville, and intermediate towns.

The foregoing has been devoted principally to the overland and State systems of steam railways having termini in Alameda County. The suburban system of the county comprises the lines of railways connecting Oakland with the principal towns of the county. Seven trains leave Oakland daily for Melrose, Seminary Park, San Leandro, San Lorenzo, Hayward, Decoto, and Niles. Five trains leave Oakland daily for Niles, Irvington, Warm Springs, Milpitas, and San José. Three trains leave daily for Niles, Suñol, Pleasanton, and Livermore; all broad-gauge lines. On the narrow-gauge lines five trains leave Oakland daily for Alameda, West San Leandro, West San Lorenzo, Russells, Mount Eden, Alvarado, Halls, Newark, Mowry's, Alviso, Santa Clara, and San José.

STREET CAR LINES.

Until the latter part of the year 1887, aside from the local trains which made connection with half-hour boats from San Francisco to Oakland, Alameda, and Berkeley, there were only six horse-car lines in the county. These were between Central and West Oakland, between East and Central Oakland, between Oakland and Alameda, between Oakland and Berkeley, and to the Mountain View Cemetery. These were as slow

as the slowest. In 1887 the Oakland Railway Company completed a cable line to the northern suburbs of Oakland. In 1890 a cable line was completed to Piedmont Springs, a distance of about four miles. These two cable roads are now in operation, and carry a large number of people to the suburbs.

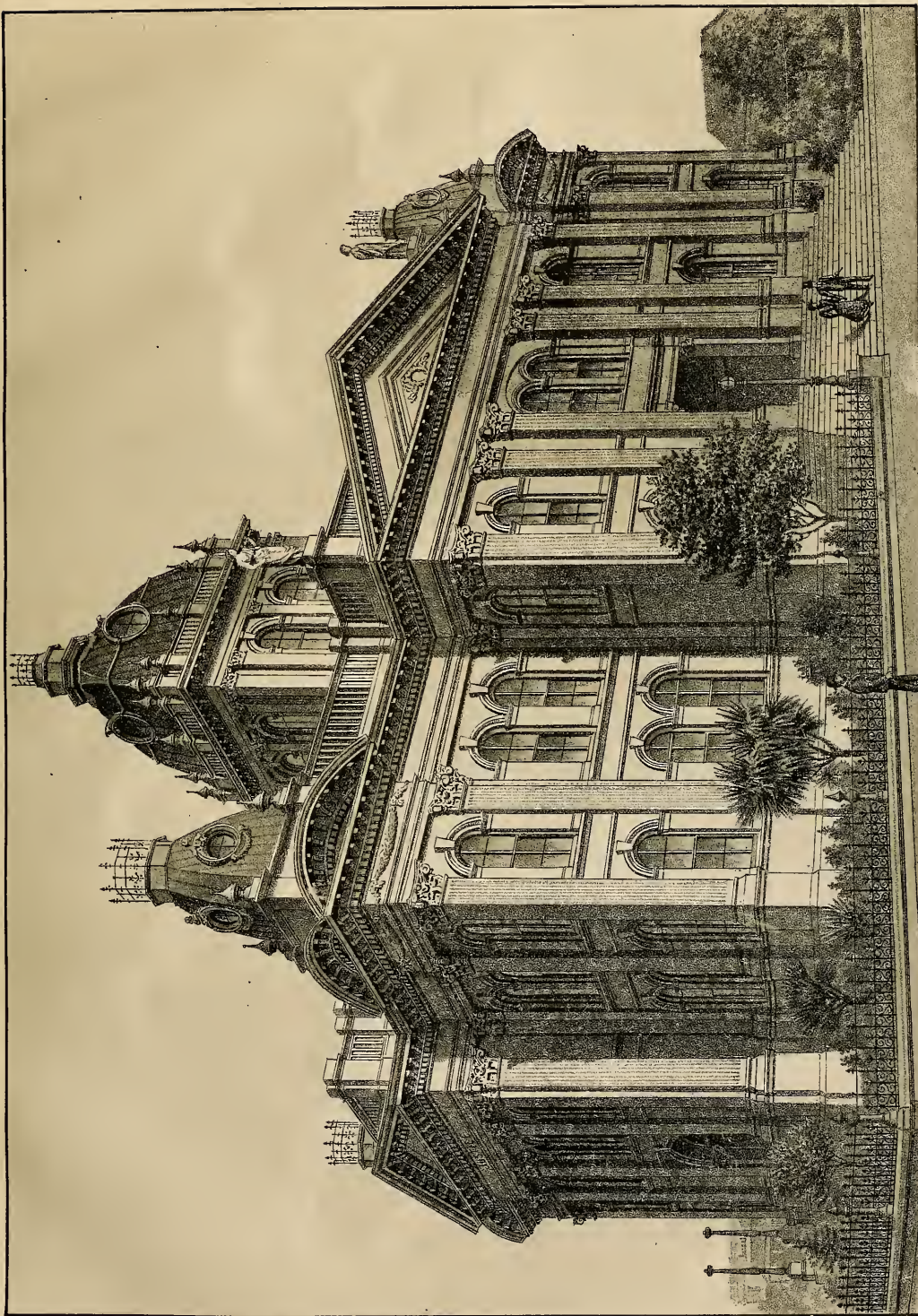
In 1891 a number of gentlemen residing in one of the interior townships—in the vicinity of San Leandro—concluded to try an electric road from the center of Oakland to Hayward on the south—sixteen miles. The road was completed in May, 1892, and has been a decided success. It makes half-hourly trips, connecting with the local trains in Oakland. The pioneer electric railroad, however, was that of the Oakland Consolidated Street Railway Company, which now has six different electric lines in operation. The first of this company's lines was between Oakland and Berkeley, and was the first electric street-car line in Alameda County. It now has two lines to Berkeley, which form a loop, the cars going out one line returning by the other. It also has branch lines to the Sixteenth Street overland depot at West Oakland, and to Mountain View Cemetery. The company also has franchises for several other branch lines now in process of extension. It has arranged for a system of transfers with the Oakland, San Leandro, and Hayward electric line, first mentioned, by which a distance of about nine miles can be traveled for one five-cent fare.

The Oakland Street Railroad Company, operating a horse car and steam dummy line between Oakland and Berkeley, in 1892 converted it into an electric line, and now has the smoothest running and most substantial line in the United States. It has a branch line about halfway between Oakland and Berkeley, running across to the East Berkeley steam line at Lorin.

The East Oakland Street Railway Company completed in 1892 an electric line from the junction of Broadway and Eighth Street through East Oakland to the suburbs. Other branches of this company's lines now operated by horses will be transformed during 1893 into electric lines.

The California Railway Company, owners of the Laundry Farm Railway, purchased the franchise and property of the Alameda, Oakland, and Piedmont Railroad Company, and have transformed them into electric lines, from horses. The main line runs from Seventh Street and Broadway, Oakland, across the estuary, through nearly the entire length of the city of Alameda, with a branch line on Park Street and Park Avenue, across to Twenty-third Avenue and East Twelfth Street, Oakland.

The Highland Park and Fruitvale street-car line has been transformed into an electric line, with double-



COURT HOUSE.

decked cars, patented by Mr. E. C. Sessions, the original promoter of the line and principal owner of the East Oakland electric line. The intention of this company is to extend its lines across to Piedmont from East Oakland. It will also have a terminus at Eleventh and Washington Streets and cross the north arm of the estuary on a bridge at Eleventh Street, making connection with its line at East Eleventh Street and Thirteenth Avenue.

Electric street franchises have been granted from Broadway to West Oakland on Eighth, Tenth, and Twelfth Streets, and these roads will all be running before the end of 1893, making five electric lines from Broadway, or Central Oakland, to the western end of the city.

Franchises are before the Board of Supervisors of the county for electric lines skirting the foothills back of Oakland, and for a line to San Jose through the Santa Clara Valley. In a short time there will be no county in the Union with more facilities for rapid travel from the interior to the county seat, and from one section to another.

Horse car lines will soon be things of the past, and even the cables seem now to be doomed. In fact, several franchises originally asked for cable, were changed to electricity before work was commenced on their construction.

The City of Oakland has a local line of the Central Pacific (leased by the Southern Pacific Company) running from its western end, at the Bay of San Francisco, to Fruitvale on the east, a distance of about six miles—with eight intermediate stations, less than a mile apart, with half hour trains, stopping at every station, connecting with the ferries to San Francisco. Upon this line the people travel back and forth, between stations, and from West Oakland to Fruitvale, without paying any fares. Such a thing is unknown anywhere else on the continent or in the world. It was a condition of the franchise of the railroad when granted, in 1868, that no fares would be collected within the limits of the city of Oakland. The same custom prevails in the city of Alameda across the estuary from Oakland. Half hour trains also run from Park Street in this city *via* First Street, Oakland, to the Oakland pier, also connecting with the ferry. No fares are collected between the five stations within the city limits of Alameda. The company charges ten cents, however, for local travel between the two cities. There is also a local line from the Oakland Pier along the bay at West Oakland to Berkeley, making half-hourly trips also, connecting with the San Francisco ferry at the same time with the Oakland and Alameda trains. A branch line runs from this line at Shell Mound, just

outside the city limits of Oakland, to West Berkeley. No fares are charged on these two Berkeley lines inside the town limits, there being four local stations on each line.

There is a ferry system connecting with the South Pacific Coast (narrow gauge) Railway mentioned above, with a pier jutting out into the bay from Alameda Point near the mouth and on the south of the estuary, running half-hourly trips to San Francisco, alternating with the broad-gauge line, so that the trips between the two ferry lines are every fifteen minutes. Separate local trains connect with the narrow-gauge boats and run to Oakland and Alameda, and no fares are collected on these trains within the limits of either city. The trains run in different parts of the cities. The tickets of the two lines are interchangeable, and passengers may go from either line to San Francisco and return by the other.

There is also a line of ferry steamers, which make hourly trips, from the foot of Broadway to San Francisco, carrying freight and passengers, charging the same fare. This line of steamers will shortly increase their trips to every thirty minutes, and reduce the time between Oakland and San Francisco to twenty-five minutes.

In 1854 one little steamer connected Oakland and Alameda County with San Francisco, carrying its few passengers, at \$1.00 a trip. To-day eight steamers, floating palaces, the finest ferry steamers in the world, are employed in carrying passengers and freight to and from San Francisco, carrying about twenty-four thousand daily, or more than eight million passengers, and millions of pounds of freight each year. For a round trip, including car fare to the landings and fare on the steamers, the price for commutation tickets is \$3.00 per month, or ten cents the round trip; and single trip tickets to San Francisco and return, twenty-five cents. No line of transportation in the world carries passengers for so cheap a rate.

THE RAILROAD YARDS.

Bridges and Buildings, Motive Power and Repairing Departments.

The headquarters of the constructive operations of the Southern Pacific Company's system are at the West Oakland yards.

The bridge and building department does all the building for the railroad and for the Pacific Improvement Company, a branch of the Southern Pacific, with the single exception of the laying of the rails. It primarily is designed to build all the bridges which the track and engineer departments require. The lat-

ter department supplies the superintendent with a profile of the space to be bridged and the data necessarily connected therewith. From this the designs are drawn and the parts of the bridge made and fitted in these yards. The bridge is built in place by a gang from this department, and when finished and turned over to the track department is ready to receive the rails.

The territory extends all over the Pacific Coast to the most distant points reached by the Southern Pacific Company's lines, whether owned or leased. To the south it reaches El Paso, to the east Ogden, and toward the north it runs into Oregon. Over this territory it supplies, with the exception of ties, every bit of lumber that is used by the several departments of the road, even providing the car department at Sacramento with all its material. When a new road is building, this department is at the end of track or even beyond erecting section houses, tool houses, and bunks for the use of the track department. Other gangs are at work along the scarcely finished sections of the road erecting stations, section houses, and all the necessary structures incidental to the needs of the railway. The department is even farther reaching in its scope, for it does the work of construction for the Pacific Improvement Company. The new Del Monte Hotel, at Monterey, Hotel El Carmelo, at Pacific Grove, Castle Crag, near Mount Shasta, are all the work of this department, and a singular proof of the capacity of the West Oakland yards is the fact that the task of supplying the material for this enormous structure did not in the least interfere with the usual work of the shop.

All stations, roundhouses, and other buildings are constructed from data supplied to this department. The designs are drawn and the specifications made for every piece of constructive work undertaken. All the work is done at these shops as far as possible, and the intention is always to complete the work in all its parts so that at the place of erection nothing is left the workmen but to fit the pieces together according to the orders given. The department has charge of the shipyard, also, at West Oakland, and has built or repaired all the steamers of the railroad company's large fleet. During the past year this one department has handled over fifteen million feet of lumber and has given employment to some twenty-five hundred men, of which number at least four hundred and fifty are carried upon the pay roll of the Oakland shops.

Another department of these yards is that of motive power and machinery. The steamers of the ferry service upon the bay and the Sacramento River are built and repaired, and the locomotive engines receive

all repairs short of rebuilding. The buildings of the department of motive power and machinery stand close together at the shore of the bay, and in addition to a few tool houses are the machine shop, the blacksmithy, and the roundhouse. The division for which these are the repair shops extends from Oakland to San Jose by Niles, to Sacramento by Livermore on the Western Pacific, to Sacramento by Benicia on the Northern and California Pacific, and to Lathrop. All ordinary and running repairs to engines employed upon the lines between Oakland and these points are done at these yards; rebuilding is done at Sacramento. The main line and local systems of the division keep ninety locomotives in use, all of which pass through these shops. The Oakland local train service requires seven large local engines built expressly for this use. They are built with the tender and engine in one block, and the greater part of the weight is supported upon the six driving wheels; at each end is a single truck of two ordinary small wheels. The local service to Alameda employs four small local engines, which run about two years before repairs are necessary. Seven small local engines are employed upon the Berkeley service.

The division switch engines at Port Costa, the West Oakland yard, and the San Francisco yard, number twenty-six. Four of these are the largest switch engines made, being eighteen by twenty-four ten-wheel locomotives, equal in size to the largest freight engines. The remainder of this class have sixteen and seventeen-inch cylinders. Because of the heavy service to which they are subjected they come in for repairs after about eighteen months' work. The average life of the passenger and freight engine on these lines is about two and a half years. The remaining twenty-eight engines of the division are freight and extra passenger engines.

The blacksmithy has four forges and a steam hammer of ten tons. The machine shop is amply fitted with necessary tools, a lathe for turning tires, which is now at work upon steel tires for the South Pacific Coast Railroad, because the shops of that road at Newark have not the necessary tools for such work, an hydraulic press for putting wheels on, a large planer, a large slatting machine, three drill punches, and six lathes. Here also is the air compressor which supplies the block signal system, extending from the pier to Sixteenth Street on the overland lines, and to Alice Street on the Fifteenth Street lines. The roundhouse has room for twenty-one locomotives. The daily supply of coal used by the locomotives is, on the average, one hundred tons.

The department employs one hundred and ten men,



HALL OF RECORDS.

and the pay roll is growing larger every month. These are classed as follows: Mechanics, thirty-four, comprising smiths, carpenters, boiler makers, machinists, and painters; helpers, twenty-six; laborers, twenty-two; wipers, fifteen, being boys who are in the line of eventually becoming engineers; watchmen and dispatchers, eleven; a foreman of the roundhouse and a foreman of the machine shop. The engineers number ninety-five, and the firemen ninety-eight. The monthly pay roll amounts to \$21,000, of which the engineers receive \$10,000, the repairing branch \$6,000, and the firemen \$5,000.

The passenger engines outside of Oakland and the yards make a monthly run of one hundred eighteen thousand four hundred seventy-eight miles; the freight engines, sixty-four thousand seven hundred eighty-six; way switching, five thousand six hundred eighty-two; terminal switching, fifty thousand seven hundred forty-one; and miscellaneous, three thousand three hundred ninety-six, making a total distance traversed in this division each month of two hundred thirty-three thousand eighty-three miles.

The shipyard, which belongs to the bridge building department, is close alongside the repair shops, upon the shore of the creek. It was first established in its present place in 1874, and the steamers *Oakland* and *Transit* were the first boats built here. In quick succession the *Capitol*, *Julia*, *Amelia*, and *El Capitan* were repaired upon these ways, and in 1878 the *Solano* was built. This, the mammoth steamer of the company's fleet, is the largest ferryboat in the world. She has two beam engines, each sixty inches in diameter, with eleven feet stroke. Her eight steel boilers were built in Sacramento. The *Apache* and *Modoc* were then built for use on the Sacramento River, followed in 1883 by the *Piedmont*, as handsome a boat as was ever used on any ferry service.

In the car department all cars or coaches arriving from the East are thoroughly inspected, repaired, and cleaned. The yard set apart for this purpose is probably the most extensive and best fitted for the purpose in the United States. Its order and cleanliness attract the attention of every Eastern railroad man who visits it. There are ten parallel tracks, one thousand feet long, with all necessary switches and cut-offs, running into a long brick shop, with transfer table and a separate track for the wrecking train, which stands alone, fully equipped with all tools, provisions, and every requisite for picking up a wreck. The main avenue down the yard is thirty feet between tracks, and here are kept in handy rack sand bins all tools and material required for the work. From two hundred to four hundred passenger coaches are cleaned monthly at these yards.

CHAPTER VI.

ECCLESIASTICAL AND FRATERNAL.

Denominational Statistics—All the Various Evangelical and the Roman Catholic Societies Have Churches in Different Parts of the County—Other Religious Institutions—The Fraternities—They are all Represented—Clubs—Charitable Institutions, etc.

CONGREGATIONALISM.—There are at the present time fifteen Congregational Churches and seven missions in Alameda County. The oldest organization is that of the First Church of Oakland, Rev. J. K. McLean, pastor. It was organized December 9, 1860, with seven-teen members. The aggregate membership in the county now is nearly twenty-six hundred. The denomination has fifteen church edifices, of the aggregate value of \$218,250. The annual contributions aggregate nearly \$45,000 for congregational expenses, and about \$15,000 for home and foreign missions, or a total of \$60,000. There are twenty-five Sunday schools, with a membership of three thousand one hundred.

Within the limits of the county this denomination has a theological seminary (the Pacific) and a preparatory school (the Hopkins Academy). The two own real estate valued at \$100,000, and have endowments of \$200,000.

The First Congregational Church of Oakland has a membership of one thousand members, and raises annually a large sum for the missions. It has the finest church edifice and chapel in the county, which is shown in plate No. 18.

PRESBYTERIANISM.—There are in the county nineteen Presbyterian congregations, with a total membership of nearly three thousand. The number of Sunday school scholars in these churches, with their mission schools, is three thousand eight hundred. The total amount of money contributed by the members of these churches during the past year for all purposes was about \$65,000. The largest of these congregations is that of the First Presbyterian Church of Oakland, Rev. Robert F. Coyle, D. D. (not long ago of the Fullerton Avenue Presbyterian Church of Chicago), pastor. It now has a membership of upward of one thousand, having gained about three hundred the past year. It is shown in plate 13 in this book. Its members contributed about \$26,000 in 1892, of which nearly \$4,000 was for missionary work at home and abroad. These congregations are now in the newly created Presbytery of Oakland, which includes Alameda and Contra Costa Counties. There is a social organization known as the Presbyterian Social Union of Alameda County, which holds quarterly social meetings.

There are also two small United Presbyterian mission congregations in the county—one in Oakland and the other in Alameda—and a Reformed Presbyterian Chinese mission, neither of them yet having a church structure. Both of the United Presbyterian congregations expect to build this year, having secured building sites.

METHODIST EPISCOPAL.—One of the earliest denominations to organize a society in Alameda County was that of the Methodist Episcopal, and it is now one of the strongest. It has an aggregate membership of nearly three thousand in the county. The first society now numbers about one thousand members and has a large church edifice. It has upward of twenty buildings in the county, of an aggregate value of about \$150,000. Its total annual contributions amount to \$50,000 and upward. It is one of the foremost in Sunday school work.

The church structure is very complete in its appointments in the way of Sunday school rooms, class rooms, parlors, libraries, etc. The sum of \$10,000 was expended in improvements last year.

THE SEVENTH-DAY ADVENTISTS.—This people introduced their faith into Oakland about the year 1874, first by means of tent meetings and the circulation of literature pertaining to their peculiar doctrines. In 1876 they organized a church, and erected a house of worship at the corner of 13th and Clay Streets. Soon after the introduction of their faith, they also established a publishing house, now known as the Pacific Press Publishing Company. This establishment has had a marvelous growth, and is now capitalized at \$200,000. The church organization also outgrew its first building, and in 1887 built a larger house, the auditorium having a seating capacity of about 1,200. This house stands at the corner of 12th and Brush Streets, on the same block as the publishing house. The membership of the church is 450, with a Sabbath school of 416 members, at present writing.

UNITARIANISM.—The first Unitarian society was founded in Oakland under the auspices of Rev. Charles W. Wendte, in 1886, with about fifty families, and at the present it numbers about three hundred families, or one thousand souls. This society of liberal Christians erected a handsome church edifice in 1891, at a cost of \$80,000, and contributes an annual income of about \$9,000. Its bond of union is: "In the love of truth and the Spirit of Jesus Christ we unite in the worship of God and the service of man." It has about two hundred in its Sunday school. It has also connected with it several societies and clubs, among them the Starr King Fraternity of two hundred sixty-six

members, which maintains reading room, entertainments and literary classes, etc.; Unity Club of young people; Lend a Hand and Yule Clubs; Woman's Auxiliary, eighty members. There are also Unitarian congregations in Alameda and Berkeley, recently organized, which have not yet erected church edifices. The building of the Oakland society is shown in plate No. 17.

ROMAN CATHOLIC.—There are twelve Roman Catholic parishes in the county, with a total membership of about seven thousand five hundred, and church and residence property valued at \$200,000. Flourishing parochial schools are running in each parish. Some of these schools have prepared and sent specimens of their work for exhibit in the Educational Department at Chicago.

One of the finest churches of the denomination on the Pacific Coast is that of St. Francis de Sales parish, Oakland, just completed this year. It is shown in plate No. 22.

PROTESTANT EPISCOPAL.—There are five Protestant Episcopal parishes in Oakland; two of them, St. John's and St. Paul's Churches, are in central Oakland; the Church of the Advent, East Oakland; St. Andrews, West Oakland, and Trinity, North Oakland. There are also flourishing parishes in Alameda and Berkeley, and missions in other parts of the county.

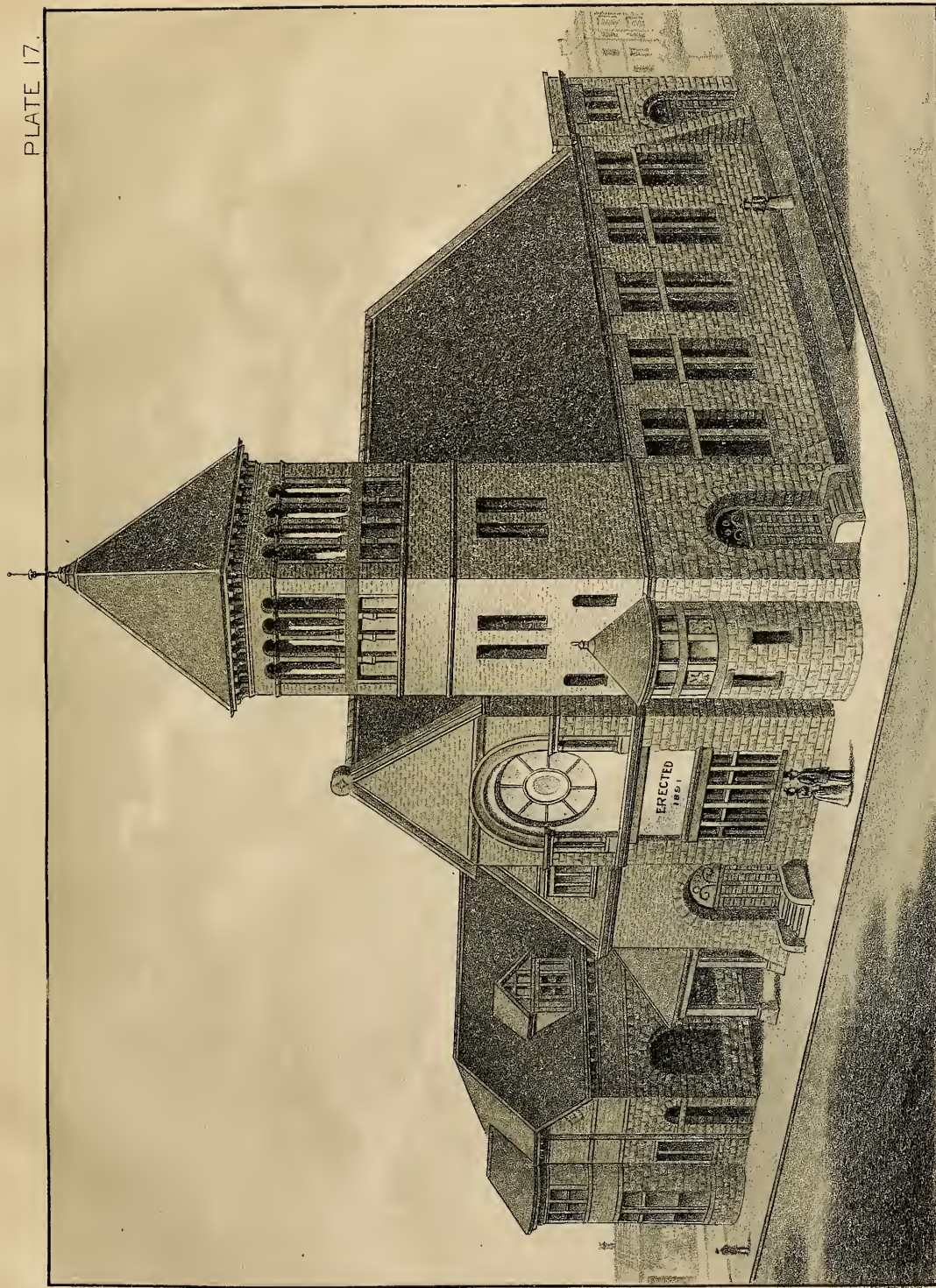
UNIVERSALISM.—The First Universalist congregation of Oakland was organized some years ago and has a neat chapel seating about five hundred persons. It is under the pastoral charge of Rev. Samuel Goodenough, and has for many years been under his care.

BAPTISTS.—The first organization of the Baptists in Alameda was that of the First Church, Oakland, in 1854. There are now ten organizations in the county, with nine church buildings, of the aggregate value of about \$70,000. The total membership is about one thousand six hundred. The annual contributions for all purposes averages about \$25,000. There are thirteen Sunday schools, with one thousand four hundred pupils enrolled.

The Free Baptists have an organization in Oakland with a membership of about one hundred and a building and lot worth about \$6,000.

DISCIPLES OF CHRIST.—There are two congregations of the Christian Church in Alameda County, with a membership of about six hundred. The largest of these is in Oakland and includes in its membership leading citizens. The other is at Irvington, in Washington Township.

EVANGELICAL LUTHERAN.—There are three Lutheran congregations in Alameda County; two of these



FIRST UNITARIAN CHURCH, 14^{AND} CASTRO STS., OAKLAND.

are German. They have church structures and large congregations. The English Lutheran congregation have recently purchased a lot in the central portion of Oakland and are now erecting a handsome church thereon.

HEBREW CONGREGATIONS.—There are two Hebrew congregations in Oakland—one known as the Orthodox and the other Reformed. The First Hebrew Congregation owns a synagogue at Clay and Thirteenth Streets and has regular services. At present it is without a rabbi. The other congregation, known as Beth Israel, is not very large and is renting a chapel for a synagogue.

LATTER-DAY SAINTS—There is a small congregation of Latter-day Saints (Josephites—anti-polygamy Mormons) who own a small church and lot in Oakland.

OAKLAND YOUNG MEN'S CHRISTIAN ASSOCIATION.—The association in Oakland was organized in 1879, and has had a perpetual existence from that date forward. Its earlier years were filled with many trials and difficulties, and at some points it seemed as though the work must be given up. These difficulties were all surmounted, however, and to-day the association has its home in the handsome building on the corner of Twelfth and Clay Streets. The lot and improvements upon it are to-day worth nearly, if not quite, \$100,000. The erection of the building is due to the persistent efforts of Captain Bray, who was secretary during the years from 1885 to 1891.

The nominal membership fee is five dollars per year, including evening educational class advantages, together with all the privileges of the gymnasium, bowling alley, bathrooms, reading room, members' parlor, social entertainments, receptions, and frequent literary entertainments of a high order. The Junior Department includes boys from the ages of eleven to sixteen, who have all the above privileges, under certain restrictions and during certain hours of the week. In the Physical Department a thorough system of medical examinations and measurements is carried out under the directions of the physical instructor. No boy or young man is permitted to exercise in the gymnasium without having first taken the necessary examination, to determine whether or not he has any physical imperfections which would make any line of exercise injurious to him.

The management of the association is, at the present time, vested in a Board of Directors, composed of eighteen business men of the city. The membership roll last year (1892) reached seven hundred.

YOUNG WOMEN'S CHRISTIAN ASSOCIATION.—On Oc-

tober 5, 1877, a number of ladies of Oakland met together and organized the Young Women's Christian Association of Oakland. The association was incorporated under the laws of the State, on November 19, 1882. Its work among homeless and friendless young women was similar to that done by the Young Men's Christian Association. Its object was outlined to be for the purposes of establishing an industrial department to provide employment for destitute and unemployed women; also a reading room and library for girls and women; to seek out young women and uncared-for children residing in the city, or who, on arriving in Oakland friendless or homeless, needed advice, sympathy, or temporary aid, to extend to them the hand of encouragement, to surround them with moral and religious influences, and to provide them with a Christian home, to carry Bible truths, Christian sympathy, love, and help to families needing such ministrations, also to persons confined in hospitals and prisons.

A new, handsome building of three stories in height was erected during 1892 and dedicated shortly before Christmas. Its purpose and use is the same as that of the Young Men's Christian Association. The lot and building are worth about \$40,000. It was erected largely by the liberal contributions of friends. It is being furnished the same way.

YOUNG MEN'S INSTITUTE.—Taking pattern from the Young Men's Christian Association's work among young men, and especially among those homeless and friendless strangers from the Eastern States, the younger members of the Roman Catholic Church organized a few years ago a society among the young members of the denomination, called the Young Men's Institute. There are a number of these societies or councils in Alameda County. They have a very beneficial effect, providing rooms and places where young men without homes may spend pleasant evenings.

YOUNG LADIES' INSTITUTE.—Similar to the Young Women's Christian Association is the Young Ladies' Institute, with its membership confined to the young women of the Roman Catholic Church or adherents of that communion. It has three institutes in Alameda County.

THE FRATERNAL SOCIETIES.

Free and Accepted Masons—Independent Order of Odd Fellows—Knights of Pythias—Ancient Order of United Workmen—Knights of Honor—American Legion of Honor—Chosen Friends—Woodmen of the World, etc.

In the early days of the Pioneers the fraternal societies of the older civilization followed to California,

and the Masonic and Odd Fellows' lodges were organized in every mining camp of any prominence. Many of these old lodges still exist in the mining towns, and scores of members still belong who annually send their dues, but who have drifted away into other towns and business, and have not been in their lodge room for many years. All the fraternal societies of prominence known in the Eastern States have lodges, councils, or camps in California.

MASONIC.—There is a lodge of F. and A. M. in nearly all the cities and towns of Alameda County. The total number of lodges in the county is nine, with an aggregate membership of one thousand and fifty.

There are three chapters of Royal Arch Masons, with three hundred and fifty members.

There is one commandery of Knights Templar, with a membership of one hundred and seventy-five.

There are a lodge, chapter and council of the Accepted and Ancient Scottish Rite, with one hundred members.

There is a Council of Royal and selected Masters, of one hundred members.

There are four chapters of the Order of the Eastern Star in the county, with a membership of five hundred and fifty.

ODD FELLOWS.—In Alameda County there are eighteen subordinate lodges of the Independent Order of Odd Fellows, and two thousand members.

There are three encampments of the Patriarchal branch, with two hundred and twenty-five members.

There is one canton of Patriarchs Militant, with a membership of sixty.

There are eight Rebekah Degree lodges, and a membership of seven hundred.

KNIGHTS OF PYTHIAS.—This order, founded on the legendary friendship of Damon and Pythias, spread to the Pacific Coast shortly after its organization in the East, and its lodges in Alameda County were among the earliest in California. There are now seven lodges, with a membership of one thousand. There is a division of the Uniform Rank, and several circles of Pythian Sisters in the county.

RED MEN.—The Independent Order of Red Men had several flourishing tribes in Alameda County prior to ten years ago, but some, if not all, surrendered their charters owing to local troubles. There are now four tribes, with a membership of two hundred and fifty.

FORESTERS.—There are in Alameda County seven courts of the Ancient Order of Foresters, with nine hundred members. There are also five circles

of the Companions of the Forest, with a membership of two hundred.

The Independent Order of Foresters have five courts and about one hundred members.

UNITED WORKMEN.—Nearly all the death benefit or bequeathment societies in the Union have lodges, councils, etc., in Alameda County, foremost among them being the Ancient Order of United Workmen, which organized the first three lodges on the Pacific Coast in Oakland in 1876, and from this nucleus spread across the bay to San Francisco and over the State and coast, there being now about eighteen thousand in the State. The first meeting of the Grand Lodge was held in Oakland. There are now twenty-two lodges in Alameda County, with a total membership of two thousand three hundred.

KNIGHTS OF HONOR.—The Knights of Honor came to the Pacific Coast in 1879. They have in Alameda County five lodges and a total membership of three hundred.

CHOSEN FRIENDS.—The Order of Chosen Friends, prior to the division and seceding of the so-called Independent Order of Chosen Friends, of the Pacific Coast, had upward of one thousand members in Alameda County. It now has seven councils and four hundred and fifty members in the county.

WOODMEN OF THE WORLD.—The Woodmen of the World were organized in Alameda County by members from Colorado in 1892, and now have six camps in the county, with a membership of four hundred.

NATIVE SONS AND DAUGHTERS.—The Native Sons of the Golden West is an organization composed of young men—natives of California. They have nine parlors in Alameda County, with eight hundred members.

The Native Daughters of the Golden West have two parlors in Alameda County. This organization is similar to that of the Native Sons.

GRAND ARMY.—There are in Alameda County about one thousand five hundred survivors of the Union Army and Navy of the late Civil War. Of these about four hundred only are in the Grand Army of the Republic. These are in five posts in various parts of the county.

TEMPERANCE SOCIETIES.

There are five lodges of Good Templars in Alameda County, with a membership of three hundred.

The Sons and Daughters of Temperance have one division in Alameda County.

The Woman's Christian Temperance Union has a membership of about five hundred in Alameda County, with branches in the various towns.



CONGREGATIONAL CHURCH, 12TH. & CLAY STS., OAKLAND.

The Non-Partisan Woman's Christian Temperance Union has a branch society in Oakland.

The Young Woman's Christian Temperance Union has an organization in the county.

There is a Francis Murphy Temperance Society with rooms in Oakland, kept up by contributions, having reading rooms, parlors, etc.

MISCELLANEOUS FRATERNAL SOCIETIES.

The Ancient Order of Hibernians have one lodge. There is one lodge of the Knights and Ladies of Honor.

The Sons of Veterans have one camp.

The Benevolent Protective Order of Elks have a strong lodge.

There is one grove of the United Ancient Order of Druids.

The Equitable Aid Union has one lodge in the county.

An Assembly of the National Union was recently formed in Oakland.

The Knights of the Golden Eagle have recently organized a castle.

The Sons of St. George and Daughters of St. George have each a strong society.

The Patriotic Sons of America have one camp.

The Order of Scottish Clans have one clan.

There is one lodge of the Order of Herman's Sons.

There is a branch of the St. Andrew's Society.

There is a branch of the British Benevolent Society and also an organization known as the British American Association in Alameda.

The Woman's Relief Corps, auxiliary to the Grand Army, have four corps in Alameda County, each of which raises funds and dispenses relief to the destitute old soldiers or sailors and their families.

There is also one circle of the Ladies of the Grand Army organized for the same purpose.

CLUBS.

There are in Alameda County about twenty-five clubs of various kinds. There are in Oakland twelve social clubs, most prominent among them the Athenian and Deutscher. There are two athletic clubs,—the Reliance and Acme. There are three boat clubs,—the Oakland Canoe, the Alameda, and the Encinal of Alameda. The two former have boathouses on the estuary of San Antonio, or Oakland Creek, and the

latter on a cove in the Bay of San Francisco at the foot of Grand Street, Alameda.

CHARITABLE INSTITUTIONS.

There are a number of charitable institutions in the county for the purpose of dispensing relief to the needy and destitute. Among the most prominent of these is the Associated Charities of Oakland, composed of delegates from the various religious denominations and fraternal societies. This society investigates cases of needy poor and destitute, and in conjunction with the Oakland Benevolent Society, dispenses aid. These two societies work together.

The Catholic Ladies' Aid Society was originated by Mrs. Mary Lohse, an Alameda County lady, some years ago, and is now a State society, *i. e.*, has branches in various counties. It raises funds and dispenses aid to deserving poor.

The Daughters of Israel is a society formed of Hebrew ladies, but their charity is not confined exclusively to the needy of their denomination.

The German Ladies' Aid Society is another society that disburses considerable sums annually to worthy poor.

The Oakland Ladies' Relief Society was organized many years ago. It maintains an Old Ladies' Home at Temescal, a suburb of Oakland.

HOME FOR ORPHANS.—In 1887 a society was organized in East Oakland by a few philanthropic ladies to aid children of destitute families in a small way. They met occasionally for the purpose of sewing for and supplying them with garments. They picked up from time to time about a dozen waifs and cared for them until it was deemed expedient to remove to West Oakland. Here a small cottage was rented and the children placed in charge of a matron. The work of the society finally awakened public interest and it grew and prospered so that it was found necessary to remove to more commodious quarters. These were found at the corner of Taylor and Campbell Streets, West Oakland. This property was purchased by the society, which had incorporated under the name of the West Oakland Home for the Care and Training of Orphans, Half Orphans and Destitute Children, for \$8,000. The late Charles Crocker gave \$1,000 and the remaining \$7,000 was contributed by citizens, in smaller amounts, giving the home to the association free from debt. In 1890 the home was found inadequate on account of the large increase in the number of children to care for, and an annex was erected at a cost of \$8,500 additional.

CHAPTER VII.

CITY OF OAKLAND AND ENVIRONS.

The Second City in California—"Athens of the Pacific"—Great Railroad Center—Unexcelled Climate—Fine Harbor—Superior Manufacturing Sites—Educational Advantages—Excellent Public Schools and Colleges for Technical Training.

The city of Oakland, the county seat of Alameda County, California, is on the mainland, on the shores of the Bay of San Francisco, directly opposite the city and peninsula of that name. It is partly in Oakland and partly in Brooklyn Township. The following condensed statement with reference to this city was published in the December, 1892, *North American Review*:

"Oakland is the second city in California; population, sixty thousand; steady annual increase, four thousand; situation directly opposite San Francisco on the eastern shore of the bay, eight miles from city to city. Trains and ferryboats make connecting trips, one every fifteen minutes; time across, thirty minutes. Ferry trains penetrate the business and residence portions; single fare, fifteen cents; round trip, twenty-five cents; monthly commutation ticket, daily round trip, \$3.00 per month, or five cents across—eight miles for five cents. Number of passengers daily, over twenty thousand. The steamer ride (fifteen minutes) is across the most beautiful harbor in America. Oakland is the actual terminus of the transcontinental railroad; all inland trains stop here, San Francisco being reached by ferry. Freight and passenger service are separate. Passenger boats carry from two thousand to four thousand passengers each. The importance of Oakland as a railroad center is well stated in the official 'Report of the Internal Commerce of the United States,' at page 178, thus: 'Oakland is in fact a great railroad center, the system which penetrates there being local, suburban, State, coast, and transcontinental.' Daily departure and arrival of trains, over three hundred.

"OAKLAND HARBOR.—On the south side of the city stretches the only east side harbor, an arm of the bay; \$990,000 completes it; the work can be done in two years; \$1,534,000 has already been expended by the government. Harbor freight traffic, 1874, only one hundred fifty-four thousand three hundred tons; in 1888, two million five hundred ninety thousand tons; it is now over three million tons annually.

"ELECTRIC RAILROADS.—City, suburban and cross town roads, fifty miles; cable roads, ten miles; any fare, with transfers, five cents; steam train from eastern to western city limits, five miles. No charge within city limits allowed.

"RESOURCES, WEALTH, ETC.—The taxable base, real estate alone in the city, \$42,000,000; personal property, \$4,000,000. One dollar on the hundred is the charter limit of city tax. Streets, bituminized or macadamized, one hundred miles; sewers, one hundred and fifty miles.

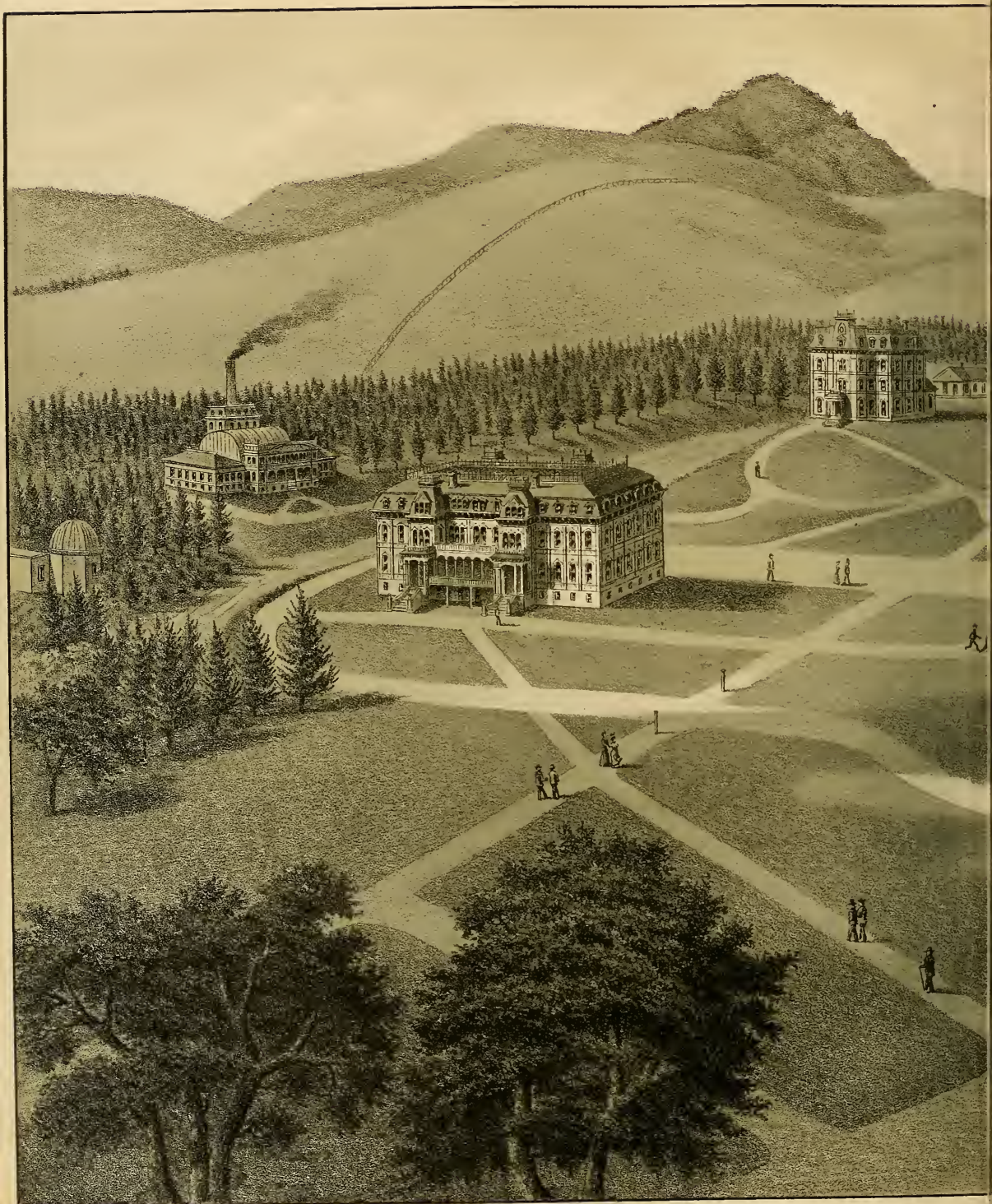
"MANUFACTORIES.—Ninety-eight; people employed, five thousand—including cotton mills, nail works, iron-works, fruit packing establishments, carriage factories, piano factory, flour mills, planing mills, potteries, shirt factories, tanneries, boiler works, paint factories, boot and shoe factory, sash and door factory, brass works, jute mills, glass works, railroad shops, etc. Banks, seven; capital stock paid in, \$1,604,000; deposits, \$10,513,530.

"ATHENS OF THE PACIFIC.—Properly so called because of educational and geographical resemblances. To the west lie the bay and islands, like the Grecian Archipelago; eastward rise the slope and Coast Range foothills, of the same height and appearance as those about Athens. This slope rises gently from the bay shore; at from three to seven miles inland it rises into undulating foothills from fifty to five hundred feet high. No view surpasses that here presented facing the bay and Golden Gate.

"SCHOOLS AND CHURCHES.—Public school children, ten thousand; private school children, four thousand. Bonds now being expended, \$400,000, to enlarge the common and high school facilities, now rivaling the very best. California had the benefit of the older States' experience, and has leaped to the educational vanguard at once. The State University is but five miles north of Oakland's center, at Berkeley—endowment \$5,000,000; students, thirteen hundred. Oakland churches, sixty-six, all denominations; membership, eighteen thousand.

"SOCIETIES.—Fraternal, musical, and art, of operative activity, are here found, as well as in the oldest States.

"CLIMATE.—Fresh, cool ocean atmosphere, with no harsh winds. Why?—Because west of San Francisco rises a range of hills one hundred feet high, east of Oakland a range at its summit from seven hundred to nine hundred feet high. This pitches the summer trade winds of the ocean upward, as they pass over Oakland, and to a height of (say) nine hundred feet. Oakland, cool, shaded and fanned, but never wind-swept, lies in the triangle of repose, on the slope east of the bay, west of its own hills, and under the cloud-bearing trade winds of summer. There is more difference between the San Francisco and the Oakland climate than would be found in five hundred miles' travel in the Mississippi Valley.



VIEW(LOOKING EAST) OF THE CALIFORNIA STATE UNIVERS





VIEW (LOOKING WEST) OF THE CALIFORNIA STATE UNIVERS



Y, BERKELEY. BAY & CITY OF SAN FRANCISCO & GOLDEN GATE.

"A soil warm and sandy, produces fruit and flowers the year round; the grade furnishes perfect drainage; germ diseases are practically unknown; mortality, only thirteen to the thousand. Flowers bloom here out-doors the year round, thousands of them. The palm, banana, orange, magnolia, heliotrope and rose flourish side by side. Thrift and comfort are universal. The green lawn is in front of the cottage as well as the palatial residence. County population, one hundred thousand. Every fruit, grain, and flower, every vine and tree produced in California, thrives in Alameda County.

"Oakland is the second city in the State, but only in wealth and population. In education, refinement, life enjoyment and civilization force, Oakland stands first on the Pacific Coast."

The above is a concise resumé of Oakland and her peculiar advantages, but it may be well to go more into detail for the purposes of this work. The distance intervening between Oakland and San Francisco is five miles, and it is sometimes said that Oakland is on the "land side," and San Francisco on the "water side"—meaning thereby that while Oakland is on the mainland, and is easy of access from north, east and south, San Francisco is built upon a narrow peninsula which is impossible of access by land except from the south. This cause gives to Oakland the termini of the principal railroads already existing, and also much greater prospective importance, as destined to be one of the greatest railroad centers in the United States a few years hence. Railroads, a good harbor, numerous large manufactories, and ample facilities for more, give Oakland first-class importance among Pacific Coast cities in an industrial sense.

With reference to this a recent writer says: "The sharp contrast between the two sides of the great Bay of San Francisco impressed the minds of the earliest settlers. On one side a peninsula of land, surrounded by deep water, but itself divided between the possession of shifting sands of the beach and of steep hill-sides, swept every day by chilly breezes and often by volumes of fog from the neighboring ocean—little herbage and scarcely a tree in sight; on the other side there was a natural park—a broad and gentle slope covered with groves and groups of magnificent oaks, which came down quite to the water's edge and dipped their branches in the sea—the whole covered in winter and spring by a brilliant carpet of luxuriant grass and red, white, and purple flowers. But the better natural harbor being on the other side of the bay, the great city of California was founded there, and Oakland was left to grow slowly for many years. But gradually, as means of communication were established, and as peo-

ple learned that the difference between the climates of the two sides of the bay was as great as can ordinarily be found by going from one zone to another, and especially as schools and municipal improvements increased, the population of Oakland grew, because this was the best side of the bay to live upon. The people who came had means and taste. They spared—as often as they could—the native oaks, and they planted European forest trees between them; they lined the streets with the trees of the temperate and the tropical zones; they built elegant houses and surrounded them with beautiful gardens; they made streets which are a paradise for drives, and, going further back to the nearest hills, they planted their villas and their gardens upon the slopes or in the warm elbows of the hills, where they can look down upon the forest of roofs and spires, upon the blue waters of the bay, upon the western wall of mountains, upon the Golden Gate opening through it, and upon the distant ocean beyond. Such is fair Oakland, 'the Athens of the Pacific,' and the home of much that is best and most promising in California."

EARLY HISTORY AND STEADY PROGRESS.

The first actual settler on the site of what is now the city of Oakland, aside from the Spanish grantees, was Moses Chase, who pitched his tent at what is now the foot of Broadway, in the winter of 1849-50, as a hunter. He was followed by the Patten Brothers, in February, 1850. Next came Colonel Henry S. Fitch and Colonel Whitney, who, foreseeing that a great city would in time spring upon this land side of the bay, made an unsuccessful attempt to purchase the site from Peralta, the Spanish grantee. In the summer of 1850 came Messrs. Moore, Carpenter, and Adams, who squatted upon the land, claiming that it belonged to the government and not to Peralta, and erected a shanty near the foot of Broadway. The site of the present city was then covered with dense thickets of brush and live oak shrubs and trees, through which ran cattle trails in different directions. The advent of these last-named gentlemen was the inauguration of the squatter war and title contests, which lasted for years. This agitation had a tendency to attract many to Oakland who probably would have sought other portions of the State.

In 1852 Oakland was incorporated as a town, by an Act of the Legislature, and the Act was signed by Governor Bigler at Benicia, then the capital of the State, on May 21, and the first election under the charter was held on the second Monday of the same month. This was the inauguration of the great city which was

to be, and now is, and which wise men then saw in the distance, as through a glass darkly. The same year a steamer was put upon the creek route, to run between this embryo city and San Francisco.

In the spring of 1853 the attention of scholars was directed to this fair and picturesque site, as a desirable place to found institutions of learning, and Rev. Henry Durant established here the Oakland College School, which was the germ of the State University, Dr. Durant becoming its first president.

In March, 1854, Oakland was inaugurated as a city, and H. W. Carpenter was elected the first Mayor; and soon after, that powerful engine of civilization and progress, the press, was founded in this young city, and a paper started called the *Alameda Express*. This, however, was preceded by that other great civilizing and refining power—the church—Rev. Samuel B. Bell having established a small church somewhere in the vicinity of what is now Third and Franklin Streets.

The city grew slowly up to the year 1864, when it started out in the real race of progressive and rapid growth. The third great civilizer and aid in progression had come into the field—the locomotive. Ground had been broken for the construction of the great transcontinental railway, and the railroad builders were at work; and Oakland was the only point where the railroad and tide water could meet; and it was determined to make this city the terminus of that great highway which was being pushed across the continent. It took some six years to get it here, but it came, for it had no other outlet to the Pacific Ocean, where car and ship could meet and exchange cargoes.

The federal census of 1860 showed a population in the city limits of one thousand five hundred and fifty-three. For the next ten years Oakland forged ahead, the census of 1870 showing a population of ten thousand five hundred. The next decade showed an increase of two hundred and fifty per cent, the census of 1880 giving a population of thirty-five thousand five hundred. Since 1880 the increase in population has been remarkable, and to-day the lowest estimate is fifty-five thousand, while those acknowledged to be experts claim that the population is not less than sixty thousand. Add to this the population of the natural suburbs of Oakland—Berkeley, Claremont, Temescal, Lorin, Golden Gate, Piedmont, Brooklyn, outside the city limits, and the population would be not less than seventy-five thousand, or nearly fifteen thousand more than the population of the whole county in 1880.

The increase in wealth has kept pace with the increase in population. In 1854 the assessed valuation of property in the city limits was \$100,905; in 1864,

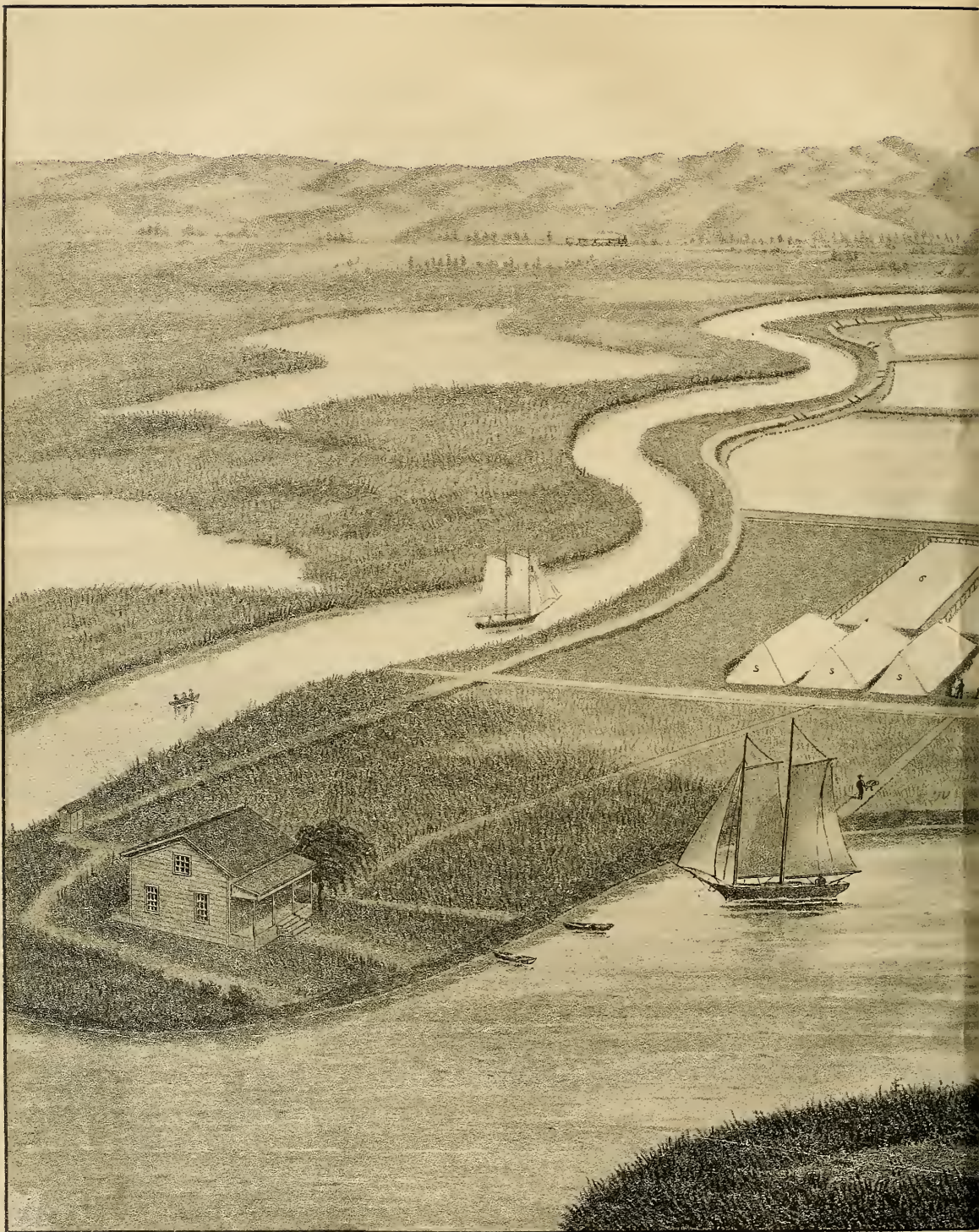
\$794,121; in 1870, \$4,257,294; in 1875, \$19,869,162; in 1880, \$28,691,640; in 1893, \$46,500,000.

In 1854 Oakland was without streets, in fact, though the survey showed them upon the maps. To-day there are some one hundred and fifty miles of legal streets, about one hundred miles of them paved and macadamized, furnishing the finest drives of any city on the continent. There are two hundred and twenty miles of sidewalks, about one hundred and twenty-five of them concrete paved. Within the past three years many streets have been paved with bituminous rock, a pavement the material for which nature has furnished this State with an inexhaustible supply, ready mixed and prepared, and when laid makes the finest, smoothest, cleanest, and most durable of pavements, and what is of greater benefit still, it is comparatively noiseless.

In 1853 the first attempt at the organization of a fire department was made. Three volunteer companies were organized. The Board of Trustees appropriated \$2,000 for the purchase of an engine, and two cisterns were constructed. This was the starting of what has since grown into one of the most efficient fire departments on the coast.

The area of Oakland has increased with its increase of population. Three times its charter lines have been extended since its first incorporation as a city, in 1854. The area of the city at the present time is about fourteen square miles; but the time is not far distant when there will be either a consolidated city and county of Oakland, or its charter lines will be extended to the whole limits of the two townships, taking in the numerous growing and populous suburbs which are now realizing the great need of municipal government. The agitation of this subject commenced about three years ago.

It may be of interest to note and give the dates of a few of the more important events in the city's history: In 1866 the first sewer was laid, and the same year marked the introduction of city water by the Contra Costa Water Company. In 1867 began the system of street improvement with the macadamizing of Broadway. In 1872 eleven miles of street were macadamized, and the same year the houses were ordered to be numbered. In 1875 the Main Lake sewer, by means of which the Oakland street drains can be flushed twice every day with clear salt water, was begun, and a year later it was completed at a cost of \$166,000—the most expensive public improvement which had then been made. In 1877 the present handsome City Hall was built upon the site of an older one, which was burned down. The dates of several other innovations were as follows: 1853, opening of the first public school;



SOLAR SALT WORKS ON ALAMEDA CREEK,(NEAR THE BAY OF SAN FRANCISCO) OFFICE 2



SACRAMENTO ST., SAN FRANCISCO, B. F. BARTON PROP. 1, 2, 3, 4, 5, SETTLING PONDS OR RESERVOIRS. 6 TO 16 EVAPORATING PONDS. 11 & 12 SALT HEAPS. S.S.S. CRYSTALLINE SALT PILES.

1854, first newspaper, a weekly called the *Contra Costa*; 1860, harbor improvements undertaken at expense of city and county; 1863, the first railroad operated, from Broadway to end of wharf, four miles; 1865, railroad extended from Broadway to Brooklyn and later same year to Hayward; 1864, first street railroad; 1865, gas introduced; 1865, jute mills established; 1867, first bank; 1868, fire limits established; 1868, Lusk Canning Factory opened; 1869, High School founded; first overland train enters Oakland; 1870, Webster Street bridge built; 1872, annexation of Brooklyn; 1872, opening of San Pablo Avenue; 1873, extension of the local railroad; 1873, city wharf built; 1874, United States Government work begun on harbor; 1874, reorganization of Fire Department; 1876, Eighth Street bridge built; 1876, fire alarm telegraph introduced; 1878, Free Public Library; 1880, South Pacific Coast (narrow gauge) Railroad enters Oakland; 1881, California and Nevada Narrow Gauge Road started; 1881, California Hosiery Company's factory; 1882, Judson Iron Works and Pacific Nail Works; 1884, cotton mills; 1886, Board of Trade established; 1888, adoption of new city charter; 1892, voting of \$400,000 for new schoolhouses.

PARKS, WATER PARK AND BOULEVARD.

In the body of the city there is a salt water lake, known as Lake Merritt, or Lake Peralta, connecting by tide gates with the harbor and bay. This lake, or water park, belongs to the city. Its waters can be renewed with each ebb and flow of the tide. The main sewer of the city is flushed from it. When tide is low in the bay, the high tide caught in the lake is turned in at the eastern end of this main sewer and rushes through, discharging in the bay. Proceedings are well under way for the beautifying of this lake, or water park. The improvement will include a boulevard around it, a distance of about three miles. This boulevard will be one hundred and fifty feet wide, will provide for foot walks, street cars, and a double driveway, and will also involve the dredging of the lake to a uniform depth of about five feet. This, when completed, will furnish at once as beautiful a land drive and as beautiful a water park as can be found in this country. The sum of \$1,000,000, it is estimated, will be required to complete this work. A portion of the boulevard is now under construction, and a steam dredger was built during the past winter upon the lake for the purpose of cleaning it out. There are also eleven handsome, well-kept parks in various portions of the city. The grass and shrubbery in these are green all the year round, and, in strange contrast

with those of the Eastern cities, men, women, and children may be seen—the children enjoying themselves playing in the walks, and the older persons walking around, or sitting enjoying the pleasant weather—in November, December, January, and February as much as in April, May, June, July, August, September, or October.

OAKLAND HARBOR.

The most magnificent harbor on the American continent is the Bay of San Francisco, which is capable of accommodating the maritime fleets and navies of the world. A portion of this immense harbor and the safest part is on the south side of the city of Oakland, being an arm of the bay completely sheltered. It is here that many vessels, especially the whaling fleet, cast anchors for a winter haven. Along this arm of the bay, whose geographical name is the Estuary of San Antonio, but commonly known as Oakland Creek, terminating at East Oakland in a large circular basin, are facilities for wharves and manufactories second to none on the Pacific Coast or in the world. This harbor is being gradually improved. The sum of \$1,534,000 has been expended upon it by the government, and \$990,000 will complete the work yet to be done. It is expected that this will be finished next year. As yet there is only a beginning in the matter of wharves and of manufacturing industries along this water front of more than forty miles in Alameda County. The difference in the tonnage of Oakland Harbor between 1874 and last year will show to what extent it has grown in less than twenty years. The tonnage traffic in 1874 was only one hundred fifty-four thousand three hundred tons. In 1888 it had grown to two million five hundred ninety thousand, and the past year it was over three million tons. When the improvements now in progress are completed and the tidal canal completed between the San Leandro Bay and the estuary, it is confidently expected that a number of new wharves will be erected and the tonnage largely increased. This canal is partially cut through the neck of land between the two bodies of water, and it is understood will be completed in the course of a year. It is for the purpose of keeping the channel of the estuary flushed out, by the ebb and flow of the tides.

Oakland, however, has in effect two harbors—an inner and an outer. The former will admit vessels drawing eighteen feet of water, and the latter possesses a depth varying from nothing at the shore line to a depth accommodating the largest ships at the outer end of the existing wharves—extending from the end

of the mole on the northerly side more than two miles into the bay. About all the transshipments from vessel to car, and *vice versa*, are made at the end of these long wharves, while the local shipping traffic is conducted in the inner harbor—the estuary and the basin, as the lower and the upper portions are respectively known. During the year 1891–92 the shipping traffic in the estuary and the basin amounted to upward of two million tons, and the traffic at the end of the pier to perhaps half as much more. When the depth of water in the estuary and its approaches has been increased from fourteen to twenty feet or more, there will be scarcely any limit to the growth of the commerce of Oakland, and that can be done if the present plans of the United States engineers are executed. Even with the present depth of water, the shipping trade of Oakland would amount to several times its present magnitude, if there were more wharves, and more particularly if there was warehouse accommodation. Perhaps there is nothing for which Oakland waits with so much impatience at this time as a good dock and warehouse system. The present indications are favorable to the early attention of docks and warehouses, the work having been already commenced on the inner harbor.

THE CITY GOVERNMENT.

The legislative department of the city is under the control of a City Council, composed of eleven members, elected biennially, one from each of the seven wards and four from the city at large. The Council is the Board of Aldermen of the city. It grants franchises, fixes tax levies and water rates. Orders for all street work and laying sewers emanate from the City Council. The work on streets and sewers, however, is done by the Superintendent of Streets under the direction of the Board of Public Works who are appointed by the Mayor to serve four years. The members of the Council serve practically without compensation, receiving the nominal salary of \$40 per month.

The executive of the City Government is the Mayor, who receives a salary of \$3,000 per year. His duties are similar to those of like office in other cities. His term of office is two years, and he is elected by the people.

The other officers, such as Auditor, Assessor, Tax Collector, etc., are similar in name and duty to those of the same nature in other cities of the same class.

The Board of Education also consists of eleven members, elected biennially at the same time and in the same manner as the members of the City Council. All legislation pertaining to the public schools is con-

trolled by this Board, but the carrying out of contracts for school buildings, furniture, and supplies is left to the Board of Public Works. The City Superintendent of Schools is *ex-officio* Secretary of the Board of Education.

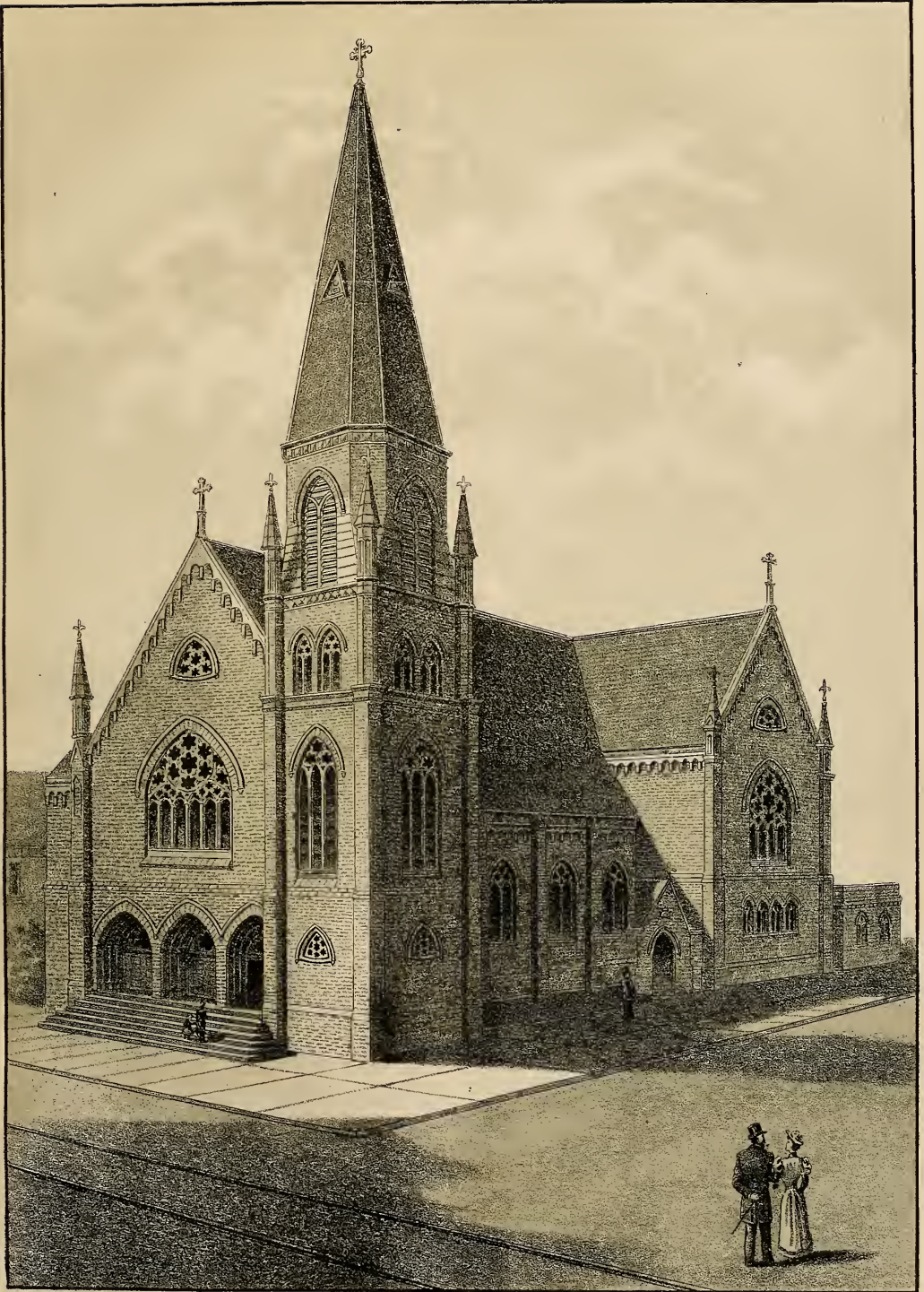
The Board of Public Works and *ex-officio* Board of Police and Fire Commissioners are appointed by the Mayor of the city. Their terms are four years and are so fixed that one member goes out of office every two years, thus giving each Mayor (whose term is only two years) the appointment of one member of the Board of Public Works, except in case of resignation, removal, or death, in which case the Mayor then in office fills the vacancies. Only two of the Board of Public Works may be members of one political party. All street work and other public work of the city is under the direction of this Board. It appoints the Superintendent of Streets and his deputies and assistants, also the Chief Engineer and other officers and employees of the Fire Department, the Chief, Captains, and members of the Police force, all of whom serve during the pleasure of the Board, but can only be removed for cause.

There is a Board of Health, consisting of five members, appointed by the Mayor, whose terms of office are two years and are so appointed that two of them go out of office and the other three in alternate years. The Board of Health has charge of all sanitary measures. It has the appointing of a Health Officer, who is also City Physician, and must be at least thirty years of age and a graduate of a regular medical college. The Health Officer is the executive officer of the Board, and must see that all laws and ordinances relating to the public health and the rules and regulations of the Board of Health are enforced. There are also Sanitary and Plumbing Inspectors under the direction of the Health Officer and the Board of Health.

PROPERTY VALUES IN AND NEAR OAKLAND.

While Oakland is all that could be desired as a place of residence, it is a matter of fact that those seeking investment for the purpose of making it a permanent place of abode will find property values very moderate and taxation comparatively light.

The most valuable residence property in the city is held at \$150 a front foot. Medium property may be had from \$50 to \$75, and cheap lots which are accessible by steam and street cars are sold at from \$20 to \$40 a front foot, while suburban sites may be purchased at from \$10 to \$20 per front foot.



CHURCH OF ST FRANCIS DE SALES, CORNER OF 21ST AND GROVE STS., OAKLAND CAL.

The following comparative tables were recently prepared by Mr. A. A. Denison, showing that, notwithstanding the natural advantages of climate, location, etc., real estate is cheap in comparison with other cities of California and Eastern States:—

Price per foot of most valuable business property:—

Chicago.....	\$6,000
Minneapolis.....	1,500
Kansas City.....	1,750
Los Angeles.....	3,000
Oakland.....	1,500
San Diego.....	2,000
San Francisco.....	5,000

Price per front foot of cheapest business property within one mile of center of business:—

Chicago.....	\$300
Minneapolis.....	100
Kansas City.....	60
Los Angeles.....	150
Oakland.....	40
San Diego.....	100
San Francisco.....	150

Price per front foot of most desirable residence property:—

Chicago.....	\$800
Minneapolis.....	300
Kansas City.....	200
Los Angeles.....	500
Oakland.....	100
San Diego.....	200
San Francisco.....	600

Price per lot (with size) of good medium residence property:—

Chicago, 25x150.....	\$5,000
Minneapolis, 25x150.....	3,000
Kansas City, 50x100.....	\$3,000 to 4,000
Los Angeles, 50x100.....	3,000 to 5,000
Oakland, 50x100.....	1,500 to 2,000
“ 25x100.....	850 to 1,200
San Diego, 50x140.....	2,000 to 3,500
San Francisco, 25x100.....	1,800 to 4,000

Price of cheapest residence property, giving size of lots, within two miles of business center:—

Chicago, 25x100.....	\$2,000
Minneapolis, 50x100.....	600
Kansas City, 50x100.....	600
Los Angeles, 50x150.....	400
Oakland, 25x100.....	150
San Diego, 25x100.....	200
San Francisco, 25x100.....	500

Highest and lowest prices of acres within four miles of business center:—

Chicago.....	\$10,000 to \$20,000
Minneapolis.....	1,250 to 5,000
Kansas City.....	500 to 1,000
Los Angeles.....	1,750 to 5,000
Oakland.....	250 to 2,000
San Diego.....	500 to 5,000

OAKLAND'S SCHOOLS.

Early History and Present Status—Excellent Buildings and Competent Instructors.

The history of the public schools of Oakland during the past thirty-five years is an interesting one and shows wonderful progress. Parents desiring a delightful residence place with the best school advantages, will find Oakland one of the best, if not the very best, place in the United States for the education of their children.

The earliest record of public schools in Oakland is found in a note of a Board of Education meeting on October 14, 1858, when R. A. Morse presented his bill for \$675 for teaching school during the ten months next preceding, and so fragmentary are the records of the time that it is not shown whether the bill was ever paid. In February, 1860, Franklin Warner succeeded Mr. Morse, and in March, 1862, the Board of Education purchased the lot on which the Lafayette School now stands, and erected thereon a two-roomed schoolhouse.

The first Act of the State Legislature creating a Board of Education for the city of Oakland was approved March 31, 1866, and in accordance therewith eight members were appointed by the City Council. The teachers, in 1867, under this Board, were six in number, having the charge of three hundred and eighty-two pupils, and the pay roll amounted to only \$510. The Legislature of 1868 passed an Act enlarging the powers of the Board of Education of Oakland, defining its powers and duties. During the past twenty-five years the public schools have been in a highly flourishing condition, and are now second to none in the Union.

During the first year after the passage of the new Act, fifteen teachers were paid \$1,240 monthly, and had the charge of five hundred and twenty-seven pupils. The Legislature of 1868 also approved an Act authorizing Oakland to issue \$50,000 in ten per cent bonds, for the purchase of school sites and erection of buildings. Four other issues of bonds have since been made for school purposes. In 1870, \$50,000 of ten per cents; in 1872, \$50,000 in eight per cents; in 1874, \$12,000 in eight per cents, and at a special bond election in 1892, the sum of \$400,000 was voted for the use of the School Department in purchasing building sites and erection of new buildings. In 1874 the first two issues were redeemed by a new issue of \$100,000 in eight per cents. These bonds have been nearly all redeemed.

The erection of a new High School at a cost of \$165,000 is now in progress, and, when completed, the present High School building will be used as a

Grammar School. The remaining \$235,000, raised from the sale of the \$400,000 bonds, is being expended in the erection of new buildings, and in making needed additions to others. When these are completed, Oakland will be one of the best equipped cities, with regard to its public schools, in the Union.

There is one feature of the Oakland School Department which is unique—in which it stands quite alone—and that is in the possession of a fully equipped Astronomical Observatory. This is the only Public School Department in the world which is thus provided. The Observatory building was erected and equipped with funds furnished for that purpose by a private citizen of Oakland, the late Anthony Chabot, and by him was made a free gift to the Board of Education, in trust for the city of Oakland. Its original cost was \$15,000. By a bequest in his will, he left an additional sum for improvements to the Observatory, and these have been recently completed by the Board of Education. It is situated in the middle of Lafayette Square, which is bounded by Tenth, Eleventh, Jefferson and Grove Streets, and the use of which, for this purpose, was given by the City Council. Its exact geographical position is in latitude 37 deg., 48 min., 5 secs. north; longitude 122 deg., 16 min., 34.4 secs. west from Greenwich, or, in time, 8 hours, 9 minutes, 6.3 seconds west from Greenwich; 3 hours, 0 minutes, 54.2 seconds west from Washington.

The Superintendent of Schools is Director of the Observatory, and the Astronomers in charge are Charles Burckhalter, of Oakland, and C. B. Hill, of the San Francisco Sub-office of the United States Coast and Geodetic Survey. The instruments are as follows: A Clark eight-inch equatorial, with eye pieces of powers from forty to eight hundred; a fine position micrometer and spectroscope; a Fauth transit, the exact counterpart of the instrument in use upon Mount Hamilton. The chronograph and mean time clocks were made by Fauth, the sidereal clock by Howard, and the chronometers by Negus.

Monday evenings are reserved for the schools, and Friday evenings for Observatory work. The other evenings of the week, except Sunday, are given to the public. Cards of admission are obtained on application to the Director of the observatory, the City Superintendent of Schools, at his office in the City Hall, where a record of appointments is kept and publicly displayed. Ten is the largest number for which cards are issued for any one evening.

The teachers under the direction of the Oakland Board of Education are paid as well as the best in any city in the land. In the upper grades there are many

cities where the salaries are much higher than those paid in Oakland, and this is particularly true as regards principalships, but in the grammar and primary grades the salaries are in advance of those paid in most places.

All teachers are required to hold a certificate given by the City Board of Examination, composed of the Superintendent and four other members appointed by the Board of Education. This Board holds examinations semiannually, and is further empowered to grant city certificates without examination in certain specified cases.

The system of classification now satisfactorily in use comprises eleven grades, from the time of the pupil's entrance, at the age of six, into the primary department, at the eighth or lowest grade, to graduation, at the age of seventeen, from the High School, thoroughly fitted for entrance, primarily, to the State University, and, incidentally, to any of the great colleges of the country. Four numbered grades are included, respectively, in the Primary and Grammar Schools, and the High School has three classes. Furthermore, each grade is subdivided by scholarship into "A" and "B" divisions, subject to a semiannual reclassification and promotion.

The High School ranks, according to the opinion of experienced educators, with the very best of its class in the whole country. Three courses are carried on side by side, each uniting with the others in certain branches; these are the literary, scientific, and classical courses, and in all of them special prominence is given to English, in which branch of study it is frequently found that candidates for university matriculation are poorly prepared.

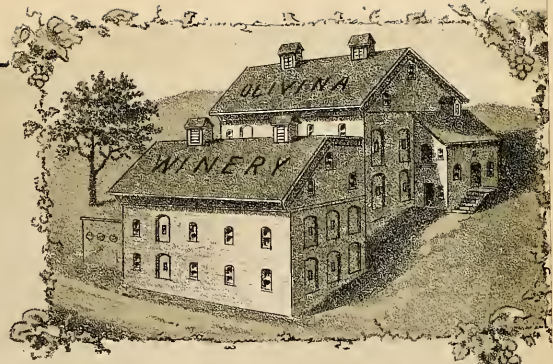
Drawing is studied through all the grades, under a special instructor, becoming naturally more complex with the advanced pupils, until, with the High School grades, it takes the form of industrial and inventive drawing. A department of industrial education is maintained, also under a special instructor, where there have been fitted up benches for woodworkers, etc.

For the benefit of such as are at work during the ordinary school hours, a night school is maintained for five nights of every week at one of the Grammar Schools in each locality of the city, and at the High School building, where boys and girls who cannot attend school during the daytime, have an opportunity of obtaining an education. The sessions last two hours and a half.

There are at present fourteen public schools in Oakland, and three others, including the new High



'OLIVINA VINEYARD' WINERY PLANT AND RESIDE



E OF JULIUS P. SMITH, LIVERMORE VALLEY, CAL.

School, will be erected within the next twelve months.

The enrollment of children in the public schools at the present time is nearly eleven thousand. The daily average attendance for one hundred and ninety-nine days of the school year 1892-93, was nearly seven thousand. There are one hundred and ninety-eight regular teachers in the employ of the department. Of these twenty-two are males and one hundred and seventy-six females. The salary of the highest is \$225 per month—that of the principal of the High School—and the lowest, the half-day assistants, \$40 per month. The tax levy for school purposes during 1892-93 was twenty-four cents on the \$100 valuation.

It will be seen from the foregoing that anyone desiring to find a location for a healthful and pleasant residence, with unexcelled climatic conditions, and at the same time the best educational and other equally desirable advantages for their families, cannot find a better place to settle down than Oakland or some of the towns in Alameda County adjacent to the county seat.

PUBLIC LIBRARY.

The Oakland Free Library has about five thousand members and has twenty five thousand volumes. It is governed by five trustees, elected at the biennial municipal election. There is a reading room in connection with the library. The reading room is kept open daily, holidays excepted, between the hours of 8 A. M. and 9 P. M. There are under control of the library trustees four branch reading rooms, one each in East Oakland, West Oakland, North Oakland, and at Twenty-third Avenue. These are under the charge of curators, and have many visitors daily.

NEWSPAPERS.

There are in Oakland three daily newspapers, one morning and two evening. The oldest of these is the *Morning Times*. The evening papers are the *Tribune* and the *Enquirer*. These papers are all ably conducted, and cover fully each day all portions of the city, as well as having special news reports from the suburban towns. They also give daily the general news of the State, our country, and the world. Besides these there are twelve secular and six religious weeklies published in the city.

AN INEXHAUSTIBLE WATER SUPPLY.

The city of Oakland and its suburbs are supplied with water from three sources, the first of which is

Lake Temescal, located in the hills northeast of Oakland. This lake is formed by a dam across Temescal Creek. It has had an approximate capacity of one hundred and ninety million gallons, but during the fall of 1890 the dam was raised, and the capacity about doubled. This was the first important source of supply. It has an elevation of about four hundred and thirty feet above the Oakland base line. Being considerably higher than the other sources, the water from this lake is principally used for the most elevated parts of the city and suburbs. Sausal Creek, east of the city, is made to furnish the water for Highland Park and vicinity. The main source of supply, however, is Lake Chabot, located in the hills about eight miles east of the city. This lake is about four miles in length, and the surface level has an elevation of about two hundred and thirty feet above the city. It carries, at the present rate of consumption, several years of supply. According to the official statement of the company, they have expended about \$4,250,000 in establishing this system of water supply. In 1889 the company greatly improved the quality of the water by constructing a complete and extensive system of storage, settling and distributing reservoirs. About two hundred miles of water pipe have been laid by the company. It is estimated by competent engineers that the water supply for Oakland is sufficient for a population of fully one million people, and when our city contains as many inhabitants as that, there are other sources yet untouched, adequate for the increased demand.

The great extent of lawns and gardens in and about the city, which are kept so bright and attractive by irrigation during the summer months, makes Oakland the largest consumer of water, according to population, of any modern city. The average consumption of Oakland *per capita* per day is two hundred and thirty-five gallons. Washington, D. C., is the next largest consumer, using one hundred and seventy gallons, while London uses only thirty-three gallons *per capita*, and San Francisco, seventy gallons.

CHABOT HOME.

Among the institutions of Oakland is the Chabot Woman's Home, endowed by the late Anthony Chabot. It is situated at No. 66 Sixth Street. It is not an eleemosynary institution, but is a place where working women who have no homes can have home comforts and a pleasant room, with library and other like privileges, for a moderate sum. The home is governed by a Board of corporate trustees and is in charge of a matron.

AMUSEMENTS.

For many years Oakland has been without a proper theater, and first-class companies seldom came to the city on account of the poor accommodations. There were several halls and the Colosseum, but until the erection of the Macdonough Theater, in 1891-92, none were adequate for a first-class play. The latter building is equal to any on the coast and surpasses most of them. It is complete in all its appointments.

OAKLAND TOWNSHIP, OUTSIDE.

Town of Berkeley—Villages of Temescal, Golden Gate, Lorin, Emeryville, Claremont, Stock Yards, etc.

In the northern part of Oakland Township, outside of the boundaries of the city of Oakland, extending along the bay shore to the northern boundary of the county, is a level tract of about fifteen square miles in extent, which is being rapidly settled up with comfortable homes and suburban villages. These will in all probability, within the next quarter of a century, or less, be included within the city limits of Oakland.

BERKELEY.

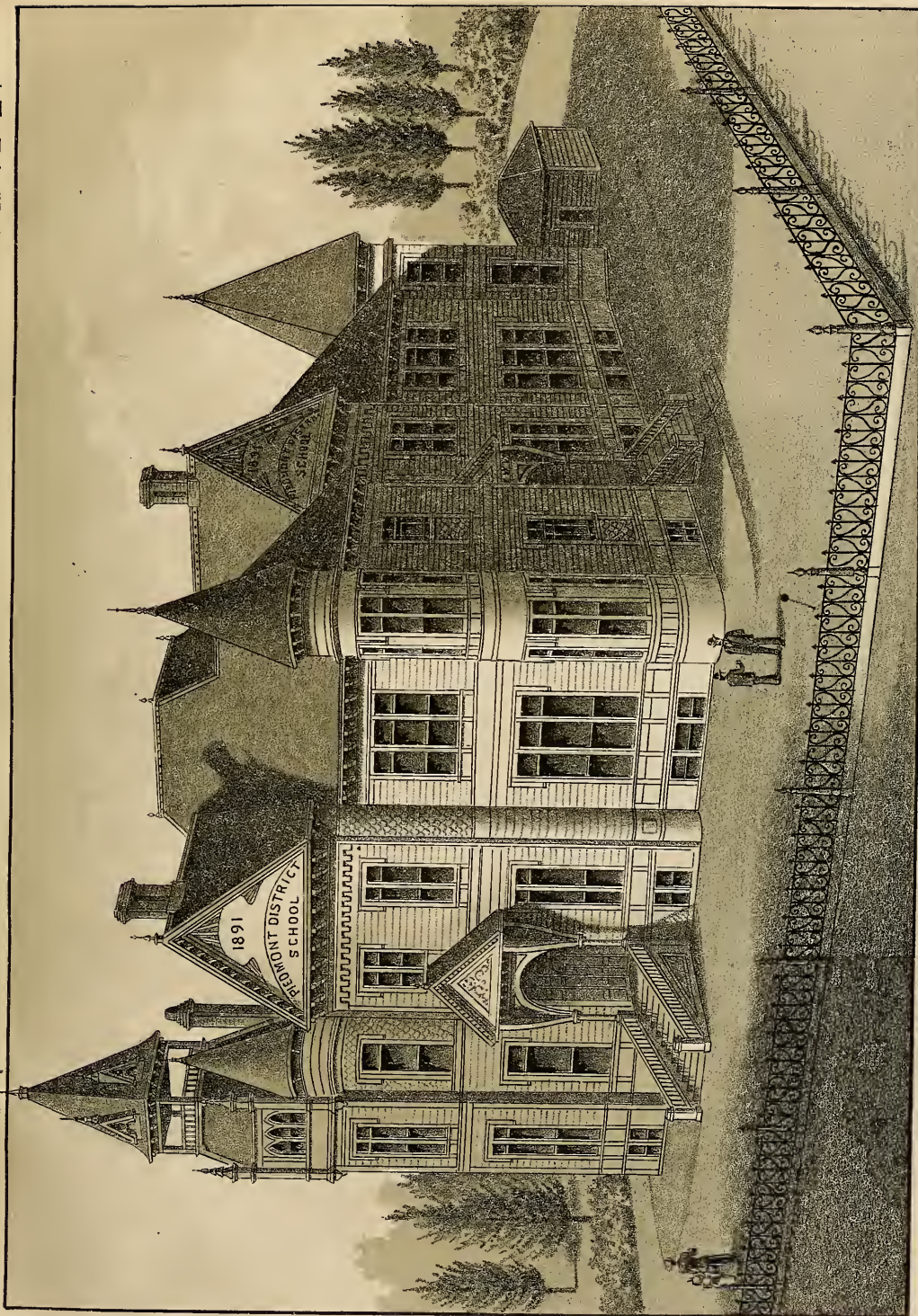
In the territory above mentioned, extending to the Contra Costa line on the east and to the bay on the west, having an area of nearly nine miles square, is the town of Berkeley, known as the University town, as within its borders is the University of the State of California. The foundation of the town was laid in the little village which sprang up immediately after the selection of the site of the State University, in 1868, but it was not until 1878 that the town was incorporated. The growth of the University has been the growth of the town, so that from a few families in 1868 it now has a population of about nine thousand, and its government is under a special charter from the Legislature. During the past two or three years many of the principal streets of the town have been macadamized their entire length, and the work of improving others is progressing rapidly. The lines of the town were extended toward the south and east in 1892, so that comparatively a small territory lies between it and Oakland. Its location for beautiful homes cannot be excelled, and from rising ground, within the town boundaries, are to be had splendid views of the Bay of San Francisco, the islands, and the Golden Gate.

While the seat of the higher education—the State University—Berkeley has also an excellent public school system, and has beside a number of the best preparatory schools for both sexes, including the High School, the Berkeley gymnasium for boys, Peralta Hall,

and Miss Head's school for girls. The public schools were organized in 1878, with Rev. Martin Kellogg, for twenty-five years a professor at the State University, and now its honored president, as one of the leading members of the Board of Education. From the small enrollment of three hundred and forty in 1879 it has grown to upward of one thousand seven hundred in 1893. The school census shows a growth from five hundred and fifteen in 1879 to nearly two thousand three hundred in 1893.

The town of Berkeley has all the advantage of nature to make it, in a sanitary regard, a town ranking with the best. Its hill slopes secure thorough drainage into deep water of the bay. Its hills seem to be natural reservoirs filled with pure water from the distant Sierra Nevada, and it is necessary only to drive a tunnel to secure an abundant supply. The Alameda Water Company has two tunnels and reservoirs, one behind the Institution for the Deaf and Dumb and the Blind, with a capacity of two million five hundred thousand gallons, and the other above the Berryman property, with a capacity of twenty-three million. The town is lighted with gas supplied from Oakland, and an electric light company belonging to the town. It has electric arc lights distributed all over its corporate limits. The site of East Berkeley is commanding and healthful. It is directly opposite the Golden Gate, and as the elevation of the University is about three hundred feet above the waters of the bay, a magnificent panoramic view is obtained from every place where vision is not shut off by trees. By day the inhabitants look down upon the beautiful bay and its islands and its kaleidoscope of moving ships. As the day ends, they can enjoy seeing the sun set through the Golden Gate, for the fine sunsets are one of the scenic attractions of the place. In the evening the view of the bay is hardly less charming than by day, for the lights on the ships, the railroad piers, the islands, and in San Francisco streets make an illumination as pretty as could be imagined. It is slightly colder in winter and warmer in summer in Berkeley than it is in Oakland, but the climate is a pleasant one nevertheless, and the air is noticeably pure and the public health good. For good sewerage no better site for a city could be found in the world. The improvement in its sewerage system is progressing with its street improvement.

Owing to the excellent railroad facilities now enjoyed, many business and professional men of San Francisco and Oakland are taking up their residence in Berkeley and the suburbs between it and Oakland, erecting handsome homes with extensive grounds. Beside the half-hourly trains of the Southern Pacific



PIEDMONT DISTRICT SCHOOL, WEBSTER AVE. NEAR CEMETERIES, OAKLAND.

Company running to East, West, and North Berkeley, there are now three electric lines running from Oakland, running cars every ten minutes. The open country along these lines is rapidly filling up. There is a horse-car line running between East and West Berkeley, and another one running to Peralta Park, in the northern limits.

There are in Berkeley strong congregations of the various religious denominations, with able pastors. During the past year there has been completed, just outside and at the entrance to the State University grounds, a handsome brick and stone structure known as Stiles Hall, for the use of the University Young Men's Christian Association.

The State Institution for the Deaf and Dumb and the Blind, mentioned elsewhere in a special article, is within the corporate boundaries of Berkeley.

The transcontinental and State railroad lines for the central, southern, and northern routes pass through West Berkeley along the bay shore. It is becoming quite a thriving manufacturing town, and its residents show a commendable activity in taking advantage of the favoring situation for trade and commerce in which they find themselves.

The population of Berkeley is between eight and nine thousand. The assessed valuation is \$6,000,000, and the town tax is seventy cents on the \$100 valuation. The expenses of running the town government are about \$60,000 annually. The sum of \$110,000 has recently been expended for an electric plant for lighting the streets of the town. The school facilities being at present inadequate, the question of voting bonds for the erection of more schoolhouses is being agitated by the citizens.

CLAREMONT.

Adjoining Berkeley on the east is the beautiful little villa of Claremont.

TEMESCAL.

Just outside of the city limits of Oakland, between it and Berkeley, and properly a continuation of Oakland, the streets being extended through it, is the unincorporated suburb of Temescal, containing a population of between two and three thousand. Through this suburb run the three electric roads to Berkeley. Its prominent citizens are, agitating the question of annexation to Oakland, and it must be only a short time until it is included in the corporate boundaries of Oakland. It was an early Spanish-American settlement.

GOLDEN GATE AND LORIN.

On the line of the East Berkeley branch road of the Southern Pacific and between Oakland and Berkeley are these two suburban villages, about one mile distant from each other. Both are growing rapidly. The former is at the end of a cable road with a half-mile horse-car extension, and one of the electric car lines to Berkeley runs through the latter. Efforts have been heretofore made to consolidate these villages with Temescal under a town incorporation. Other efforts are being made to include them within the Oakland city limits.

EMERYVILLE.

Outside the Oakland city limits, on the shore of the bay, is the suburb of Emeryville. Here the Judson Works are situated, and the warehouses and workshops of the Michigan Furniture Factory. Shellmound Park, a summer picnic ground, and the Oakland Trotting Park are also adjoining this suburb. The transcontinental, State, and Berkeley local trains pass through. The West Berkeley train branches off at Shell Mound Station. This is also the terminus of the California and Nevada narrow gauge, and it is said will be the Alameda County end of a new ferry to San Francisco, if this road should be the terminus of a competing transcontinental line. The ferry company has already been incorporated.

THE STOCK YARDS.

In Oakland Township, between Oakland and West Berkeley, on the line of the overland Central Pacific Railway, are situated the Stock Yards, where thousands of cattle and sheep are slaughtered for the markets of Oakland and surrounding towns and cities, and for San Francisco as well. There are about a dozen firms doing a slaughtering business here, and the annual output is quite large. There are annually slaughtered about two hundred and fifty thousand sheep, twenty-three thousand hogs, thirty thousand beeves, and two thousand five hundred calves. The annual output of the yards is about \$1,500,000. They are situated upon the bay, and the refuse is cast into it and floated off with the tide.

There are beside the slaughter houses, establishments for tanning the hides, for burning the bones, for preparing tongues, brains, and tripe for market, for reducing the offal to tallow and glue, so that the entire output is between \$1,750,000 and \$2,000,000.

FABIOLA HOSPITAL.

On Moss Avenue, between New Broadway and Webster Avenue, is situated the Fabiola Hospital. It

was opened about three years ago as a homeopathic institution, and is to a certain extent under the control of physicians of that school, but patients who desire it may be treated by practitioners of any of the other schools. The institution is not eleemosynary, but the fees charged for attendance and rooms are moderate, and little more than actual cost, on account of endowments made for that purpose.

HOME FOR THE ADULT BLIND.

Just outside the city limits of Oakland is situated the Industrial Home for Adult Blind. It occupies a block of ground on Telegraph Avenue. It is partly supported by State aid and partly by the work turned out by the occupants—principally brooms and brushes. It is under the control of directors appointed by the Governor of the State.

OLD LADIES' HOME.

On Linden Lane, between Broadway and Telegraph Avenue, Temescal, is the Home for Old Ladies, founded by the Oakland Ladies' Relief Society. It receives some State aid and has an income from certain endowments made by will by different persons. A certain sum is required from the friends of inmates annually during life. The institution is well conducted. There is also a department for the care of orphan children.

BROOKLYN TOWNSHIP, OUTSIDE.

On the eastern boundary of the city of Oakland lies a considerable strip of territory in Brooklyn Township, about one-third of the township being in the city limits and the remainder outside. Very much of this outside district is covered with suburban homes clear to the Eden Township line on the east and south and Alameda on the west.

The line between Oakland and Fruitvale is similar to that between Oakland and Temescal on the northeast. There are houses standing on the line between the city and county. It is said the number on one house is in the county while the greater part of the building is in the city. Some of the handsomest houses and grounds in Alameda County are in the suburb of Fruitvale, and Fruitvale Avenue, with its rows of shade trees on either side and fruit orchards and flower gardens, is considered a very handsome summer drive.

Beyond Fruitvale are Melrose, Mills College, Elmhurst and other growing suburbs. Since the opening of the electric street railroad to San Leandro and Hayward in 1892, numerous residences have been erected

along the San Leandro road, and quite a little town is growing up around the power house of this road.

At Melrose is the first smelting works for rebellious ores and there is now in operation a smaller smelting works for extracting quicksilver. There are also in operation at the suburb three factories for the manufacture of fuse for use in mining and rock quarrying. A cordage works for the manufacture of rope is at the present time idle.

In the hills in this township, overlooking Oakland, are the residence and grounds of the "Poet of the Sierras," Joaquin Miller.

CHAPTER VIII.

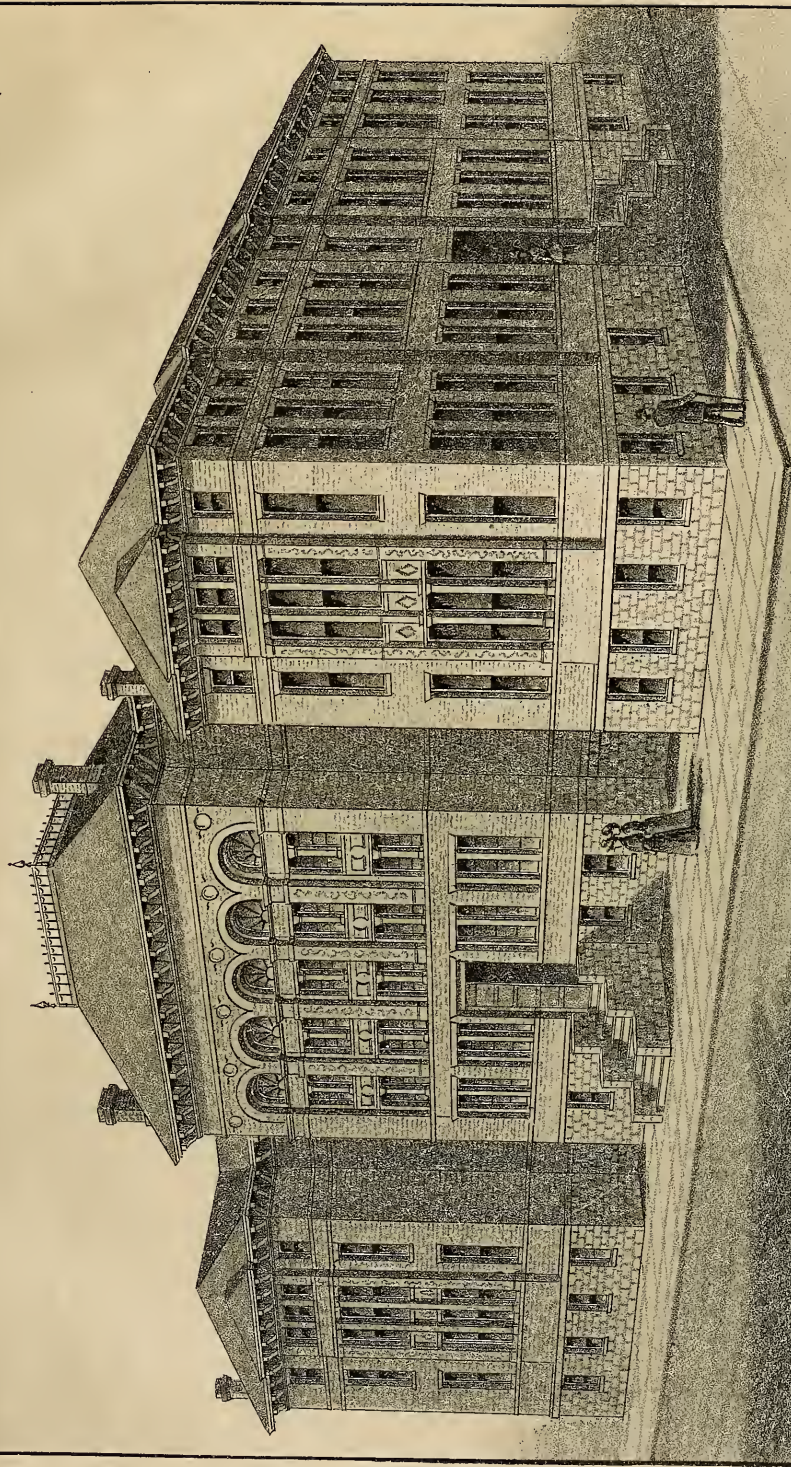
ALAMEDA CITY AND TOWNSHIP.

A City of Elegant Homes, Handsome Drives and Healthful Climate—One of the Best Sanitary Systems in the World—Sewers Automatically Flushed Every Four Hours—One of the Healthiest Cities in the United States.

Across the Estuary of San Antonio from Oakland, on what is at present a peninsula lying between the estuary and the Bay of San Francisco, lies the city and township of Alameda. The settlement of the peninsula of Alameda dates back to about the same time as that of Oakland, but its growth has been much slower until within the past five years. It now claims a population of between thirteen thousand and fourteen thousand, and is rapidly increasing. It has the same railroad advantages as Oakland, *i. e.*, fifteen-minute trips with interchangeable tickets by broad or narrow-gauge ferry to San Francisco. Both roads run through the entire length of the city, about half a mile apart, with several stations on each. No fares are collected within the city limits or between stations, the railroad company treating the residents of Alameda the same as those of Oakland. The fare to San Francisco by way of either the broad or narrow-gauge ferry routes is twenty-five cents return trip, and commutations \$3 00 per month, using either or both routes, interchangeably, if desired.

The government of the city is intrusted to a Board of City Trustees. There is no Mayor or Common Council, or Board of Public Works, but the other officers are similar to those of towns of the fifth class. There is a Board of Education, Board of Health and sanitary officers, and Board of Library Trustees. The duties of Police Magistrate are performed by the City Recorder, and the City Marshal acts as Chief of Police and has ten officers under him.

The public schools of Alameda are equal to those of any other city in the State. They are under the supervision of the City Superintendent of Schools.



NEW HIGH SCHOOL BUILDING, OAKLAND, 12TH ST. FRONT.

There is an efficient Fire Department, under proper officers.

The city owns its electric light plant, and has lights on poles or towers in every part of the city, being one of the best-lighted cities on the Pacific Coast.

Its sewer system is claimed to be the best of any city in the United States, and has automatic sewer flushers, by which every sewer is flushed every four hours, and the sewage carried away. The system is a new one, and is being urged now in other cities, East and West. The sewer system consists, in the first place, of two intercepting sewers, one on each side of the peninsula. It must be understood, by those not familiar with the lay of the land, that Alameda is a long peninsula, entirely devoid of hills, the highest altitude being along its center, and the land sloping gently each way. On the south side is the Bay of San Francisco, and on the north side Oakland Harbor and the tidal canal. The natural way to sewer the city is from the center to the edges; but it was found it would never do to discharge sewage from every street upon the sand beaches and shores of the city. Returning tides would fetch it back, and the odors would always remain. So the scheme of intercepting sewers along the edges of the town was devised. They receive the sewage from the many lateral sewers, and discharge it all together in such a manner that it is carried out on every tide and assimilated by the great body of salt water. The pipe of the lateral sewers is of iron stone, and the diameter is four, six, and eight inches. The pipe has a bell at one end, so that the plain end of its predecessor fits in. The joint is then caulked and cemented, the cement being applied with the fingers, so that a water-tight joint is made. The lateral sewers are all flushed several times a day automatically. At the highest point of these sewers flush tanks, built upon the line of the sidewalks, connect with them. These flush tanks are filled from the water mains, and when they get full, their center of gravity is so shifted that they tip, spilling the water in a volume, and then righting themselves for another filling. Being thus so admirably drained, having no such thing as sewer gas, and having no stagnant ponds or marshes to germinate disease, it is not the least wonder that Alameda is healthful, that its death rate is lower than that of any other town or city on the coast, and that it should enjoy a fame reaching across the continent, and which is still spreading.

ARTESIAN WATER SUPPLY.

The city is supplied with artesian water from a series of wells at Fitchburg, two miles to the east of

town, and another series on High Street, in the easterly portion of the city. The water is raised and distributed by the Holly system. It has so far been ample for all the city's needs, and is always absolutely pure. Alameda's entire freedom from epidemics, and its reasonable immunity from even sporadic cases of infectious diseases, constitute abundant testimony as to the purity of its water supply. The fact that the source can never be contaminated, and that the quantity for a year is never contingent upon the amount of rainfall or any other condition that may produce a shortage, are great factors in favor of the city and inducements to those seeking homes. Many of the inhabitants have their own artesian wells, preferring to be independent, and also, if they are extensive consumers, saving money by it. There seems to be an abundance of subterranean water, and any who desire to tap it may set up their own water works. The streets of Alameda, in summer time, are daily sprinkled with fresh water. They are kept in excellent condition; but an experiment was made last year, on certain stretches of the roadways, with salt water, and the result was eminently satisfactory. Less water laid the dust more effectually, effecting a great saving in expense for the water and the distribution of it, besides keeping down the dust much better. A system of pipes to supply salt water, not only for street sprinkling, but for the extinguishment of fires and the flushing of sewers, is now talked of, is in every way practicable and desirable, and will no doubt some day be put in.

The assessed valuation of the city and township for the purposes of taxation, real and personal property, is \$11,796,565. The total tax rate for 1892-93 was \$1.95, of which 80 cents was for State and county purposes.

Aside from the two steam railroads running every half hour between Alameda and Oakland, there has been a horse-car line running for years making the trip between Broadway and Seventh Streets, Oakland, and Santa Clara and Park Streets, Alameda, making the trip in about half an hour. This line has been transformed into an electric line and runs a branch line, also transformed from horses, from the narrow-gauge depot on Park Street across to Twelfth Street and Twenty-third Avenue, Oakland, connecting with the Oakland local trains at that point.

Alameda is a city of beautiful homes and finely macadamized streets and handsome drives. Many business men of San Francisco make their home in this city, being within an hour's ride by train and ferry-boat.

At Alameda Point on the estuary the ship-building

industry is being developed. There are a number of shipyards, where a large number of boats are made each year, ranging from the sporting shell boats to barkentines of one thousand tons. One firm uses twenty thousand to twenty-two thousand feet of lumber annually in building small boats, principally whaleboats, and repairs from fifty to sixty whaleboats. One firm makes a specialty of shell boats for racing.

At the west end of Alameda, on the bay shore, are situated the borax refining works, the extensive petroleum oil refining works and the pottery works of Clark & Sons, mentioned elsewhere in detail. There are also a number of planing and other mills and manufactories in this city.

The roundhouses of the South Pacific Coast Railway (narrow gauge) are at Alameda Point.

CHAPTER IX.

EDEN TOWNSHIP.

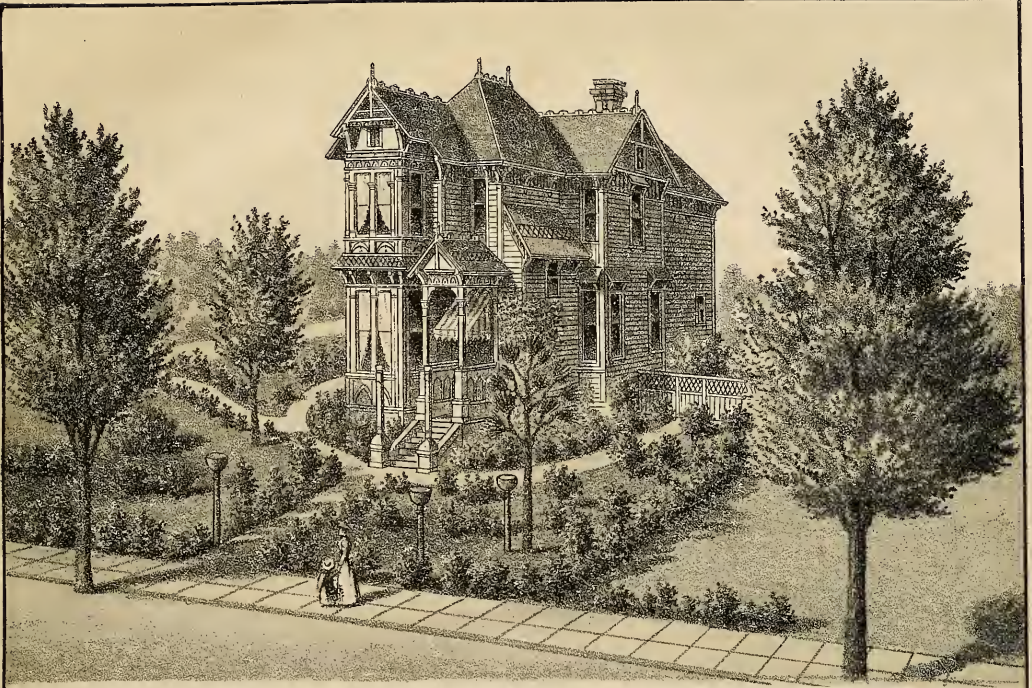
A Very Fertile Alluvial Tract of Land that was a Cattle Pasture four Decades Ago, Now the Garden of the County—More Cherries Sent to Eastern Markets than from Remainder of California—Other Fruits and Vegetables in Large Quantities.

Adjoining Brooklyn on the south is Eden Township. In the earlier history of the county its territory was principally used for pasturage for cattle. The chief products were cereals, but during the past ten years the greater portion has been transferred to horticulture and vegetables. From Eden Township are shipped to the Eastern States more cherries than from the remainder of the State. Here also are raised large quantities of vegetables for the local markets. The mission fathers in the earlier days chose the land farther to the south, near the Alameda Creek, for the establishment of their missions. The first settlement of English speaking people was made by the Fergusons, a Scotch family, who secured from the Spanish grantees a square mile of fertile land upon the alluvial plain. George Fleming, the late Judge Crane, John Martin, and Cornelius Mohr speedily followed, and in 1851 Richard Barron built Eden landing. Matthew H. Allen built a second landing on Calf Creek and in a few months more Joel Russell and twenty associates built a third on the same waterway. In 1853 the united efforts of the settlers built what was known as the "squatter fence," which, extending from Mount Eden across the plain and well up the slope of the foothills, was designed to protect the farms from the incursions of mobs of cattle roaming half wild through the country. In 1858 San Leandro, in this township, was made the county seat of the county, and so re-

mained till 1873. The territory now embraced in the township boundaries formed part of the ranchos of the Sotos, Peraltas, Vallejos, Castros, and Estudillos.

When compared with other parts of the State, and with other townships of the county, the subdivision has been minute and the number of small holdings large. Many Portuguese, from Portugal and the Western islands, have taken advantage of this policy on the part of the holders of large blocks of land, and have small farms closely cultivated all over the plain and in the rich valleys that run up into the hills.

In 1842 that portion of the township now covered by the city of San Leandro, recently incorporated as a city of the fifth class, was granted by the Mexican Governor to Don Jose Estudillo, whose mansion house erected in 1850 is still standing. Most of his lands came into the possession of Theodore Le Roy upon the death of the original grantee and were cut up and sold. So rapid from 1850 was the growth of settlement on these lands that within five years San Leandro had become the most important town in the county. The Legislature on the 13th of May, 1872, granted the petition of the citizens and incorporated the town, establishing its width at one mile toward the south, measured from San Leandro Creek, and its depth at two miles toward the west, from the foot of the hills. The center of the town is eight and one-fourth miles southerly from the Oakland City Hall. San Leandro has always presented many attractions as a place of suburban residence, being less than an hour by rail from San Francisco, with eight trains each way every day. Fourteen miles of streets have been graded and macadamized and many fine residences have been erected. The population is estimated at twenty-five hundred. There had been for three years prior to 1886 no town tax, the expenses having been met by the amount received from licenses paid by various trades upon a sliding scale. In 1886 a levy of twenty cents on the \$100 was made for the benefit of the road fund. A volunteer fire department of forty members is an active organization. There are two hose carts and one thousand five hundred feet of hose. The water supply is drawn from Lake Chabot. The hydrants are within two blocks of each other and the pressure is sufficient to throw an inch stream one hundred and forty-seven and one-half feet without an engine. The public school of the town contains eight rooms and accommodates over five hundred children, who are in daily attendance. Saint Mary's Convent has a school in which two hundred pupils are carefully taught. There are three churches, the Methodist, Roman Catholic, and Presbyterian, and mission work among the Portuguese is conducted by a



RESIDENCE OF E. L. SCHIEFFELIN, CENTRAL AVE. ALAMEDA CAL.



"CONCANNON VINEYARD" AND RES. OF JAMES CONCANNON, LIVERMORE CAL.

priest of that nationality and a Presbyterian missionary.

The Oakland, San Leandro and Hayward Electric Railway runs half-hourly trains from Oakland through San Leandro and San Lorenzo to Hayward, all in this township. The latter town is about five miles farther out from Oakland. San Lorenzo, a small village, lies between San Leandro and Hayward. In and around San Lorenzo is the belt in which large quantities of cherries are grown, as well as other fine fruits, such as apricots, pears and peaches. As early as 1854 an attempt was made to create a township at this place, mainly with a view of securing the county seat on the score of its central location. A map of the town of San Lorenzo, which name covered the whole district embraced by Hayward and the present San Lorenzo, was placed on record in that year, but the project was heartily opposed by Castro, who owned almost all the land thereabouts. In 1856, however, Castro readjusted the map already on file and sold the town lots at good prices, the new town taking the name of William Hayward, who in 1852 had settled upon the Castro grant. Hayward now numbers some two thousand inhabitants. It has two large hotels, churches of the Roman Catholic, Methodist, and Congregational denominations. Union High School No. 3 is located at Hayward. It is also in the center of a large fruit and farming district, and in the hands of its merchants is concentrated a large part of the trade of the valley.

Within the limits of Eden Township grow all kinds of vegetables, fruits, berries, and cereals of every variety. It is peculiarly the home of the cherry and apricot. Both can be produced with great profit—sometimes with a profit of \$500 to \$600 per acre, and in one or two instances has reached \$1,000 per acre, but that was when the prices were very high and the crop large, and before there was so much land set to this kind of fruit. A fair average to-day, however, would be \$250 per acre, while several kinds of vegetables, when raised for the market, will give a still higher average. For productiveness the soil in this township ranks with the very best in the State. The citrus fruits, as well as the others, make a thrifty growth there. There are no orchards of those fruits, but in many of the gardens and in the lawns and grounds around the residences are beautiful full-grown orange and lemon trees that make the finest of ornamental trees, and at the same time bear the finest of fruit. A specimen of the Mediterranean sweet variety of oranges grown on a seven-year-old tree in an orchard of San Leandro, where it stands among its fellow fruit trees of the cherry, apricot, etc., varieties, as vig-

orous and thrifty as any of them, is now lying on the table of the writer. The fruit from this tree is large and has a delicious flavor.

In the yard of a residence in San Leandro stands a magnificent banana tree. The banana is one of the most sensitive of the tropical trees, and its long, elegant leaves sometimes get nipped with the cold, but, notwithstanding this, it seems to be making its way to a healthy maturity.

Almond trees are so common in Eden Township that they are grown along the sidewalks as shade trees in San Leandro, Hayward and San Lorenzo.

At San Lorenzo is the Meek estate orchard of seven hundred acres of trees. This may seem incredible, but nevertheless it is true. There are in one body seven hundred acres of fruit trees, and not only that, but among these trees are five hundred acres of small fruits, such as currants, gooseberries, raspberries, etc., making an immense orchard and a large output of fruits of all kinds annually.

THE COUNTY FARM.

In Eden Township, between San Leandro and Hayward, at the base of the foothills, is located the county Farm and Hospital and Infirmary. This institution is in charge of the Board of Supervisors of the county, who are overseers of the poor, as well as the legislative body of the county. The immediate supervision is under a resident superintendent, who is usually a physician. The buildings are generally full, and sometimes there is not room enough for applicants. The number at the farm ranges from one hundred seventy-five to three hundred.

OYSTER BEDS.

For many years after the settlement of California, and, indeed, until very recently, fresh oysters, especially those in the shell, were a rare luxury, and, prior to the building of the Central Pacific Railroad, comparatively unknown, and, with the exception of a few of very small size and indifferent flavor from Shoalwater Bay, Oregon, since that time until ten or a dozen years ago they were the only shell bivalves used in California, except during the winter months, but the advent of the "cold storage" cars made the shipments easier. However, in a few more years it will be entirely unnecessary for the shipment of oysters into California from the East, for the reason that the home supply will be sufficient for the demand. For the present the only oyster beds of any consequence found in the State are along the shores of the Bay of San

Francisco, in Alameda and San Mateo Counties. In the year 1879 the Legislature of the State passed an Act for the encouragement of the industry, providing for the taking up of shoal water beds along the bay shores. Under this Act Thomas W. Mulford, Socrates Huff and Andrew J. Gooch entered about thirty-five thousand acres on the Alameda County shore, about two miles west of the town of San Leandro. These beds are two and a half miles along the shore, by two miles into the bay. During the lowest tides a large portion of these beds is uncovered. When Messrs. Mulford, Huff and Gooch entered these beds, there were nothing but small California oysters in them, unfit for use. They transplanted a few Eastern oysters, and allowed them to increase until the winter of 1891-92, when they commenced to market from the beds, shipping to Oakland and San Francisco, where they get \$12.50 per thousand in the shell. Up to this spring this company has cleared about \$10,000. They only gather sufficient to supply the local demand. These oysters are equal in size and flavor to the Eastern oyster. Beside these beds, the Morgan Oyster Company, of San Francisco, own large beds along the Alameda shore on the south, and several other gentlemen own small beds along the shore north of Mulford and associates.

CHAPTER X.

MURRAY TOWNSHIP.

An Extensive Wine Growing District—Wine Equal to the Best French Product—Grapes of the Finest European Varieties Only Grown—Fruit and Nuts—Hundreds of Acres in Almonds—Irrigation Unnecessary.

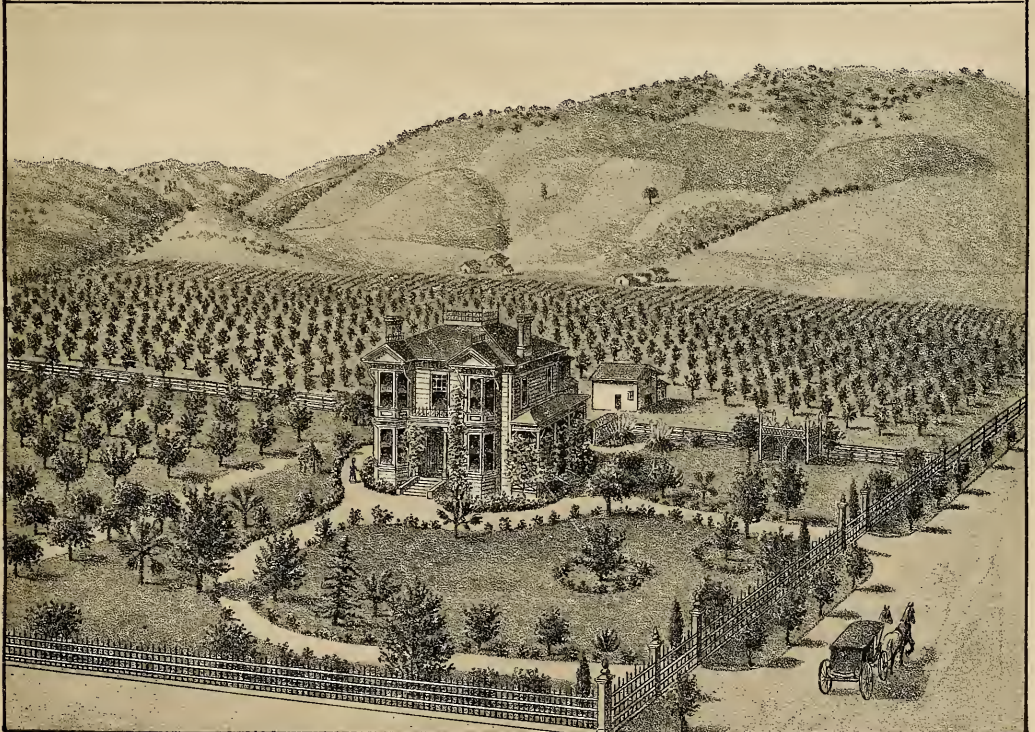
Of Alameda County the eastern half is in Murray Township, which has an area of four hundred square miles. About one-third of it is mountainous or hilly, and two-thirds arable land. About one-half of the tillable area is inclined to be adobe soil, and is well adapted for the production of cereals and hay. The other half is composed of alluvial loams, which produce vegetables in abundance that find a ready sale in the markets of San Francisco and Oakland, and in clayey and gravelly loams adapted to various varieties of fruit and all kinds of grapevines.

In this township are broad valleys, rolling foothills, and precipitous mountains. It contains prototypes of the vine lands of France, the olive lands of Spain, the fig lands of Smyrna, and the fertile bottom lands of Holland, without the dykes. The flavors of the wines of this township and other townships of Alameda County are unexcelled anywhere in the State, and are believed to be equal to the best importations from Europe. With reference to the wine industry of the

township it may be said that it was at first an experiment, because it was at first believed the lack of moisture by rainfall would not allow the grapes to mature. This was dispelled by experience, and it was shown by cultivation that the driest soils would maintain moisture during the summer season within a few inches of the surface, even in the driest years. These were lands similar, then, to the famous wine lands of Bordeaux and Burgundy in France. When this was demonstrated by experiment, a number of men, including Julius P. Smith, C. A. and C. J. Wetmore, J. H. Wheeler, and the late Dr. George Bernard, about 1881, invested in a district now comprising something over five thousand acres of what was then known as the poorest land in the Livermore Valley, in this township—land upon which grain had made poor growth and yield. Upon this land the vine flourished. In 1883 the first yield of grapes was handled by one winery, but it now requires fourteen to handle the output, which has grown from a few hundred gallons to nearly five hundred thousand gallons. Only the highest of the European wine grapes have been planted. The following are some of the varieties grown in this district: Zinfandel, Sauvignon Vert, Cabernet Sauvignon, Sauvignon Blanc, Malvoisie, Muscatine du Bordulais, Malbec, Franken Riesling, Colombar, Mataro, Charbono, Folle Blanche, Petite Pinot, Petite Rouschet, Semillon, Johannesberg Riesling, Grenache, Petite Syrah, Frontignan, Chauche Noir, Grosse Blauer, Trosseau, Burger, Cabernet Franc, Golden Chasselas, Gutedel, Meunier, Merlot, Mondeuse, Chablis, Alicante Bouschet, Verdot, Blanc Elba, Tannat, Orleans Riesling, Gray Riesling, Boal, Folle Noir, Rose Peru, Verdal. The most prominent varieties grown are the Zinfandel, and the largest output of wine is of that variety. At a recent meeting of a convention of California viticulturists a committee of fifteen experts selected twenty-nine "extra" types of wine from three hundred and seventy-five samples, and of these twenty-nine, fifteen were from Alameda County vintages, showing the high grade of its products. Adjoining this wine district of five thousand acres are still one hundred thousand acres equally as well adapted for vines. There is now produced in Murray Township every European grape distinguished for the quality of its wine, and the vintages of the Livermore Valley have taken the lead of all others in California. Vineyards are produced in this district from the cuttings, and begin to bear in the third or fourth year, according to the variety, and are in full bearing in the seventh or eighth years. The cost of vine land is from \$40 to \$90 per acre, and the relative cost of the vineyard—setting out the vines, care, etc.,



RESIDENCE OF JAMES SHINN, NILES, CAL.



COUNTRY HOME OF LORING PICKERING, NILES, CAL

until self-supporting—is from \$50 to \$100 additional per acre. Twenty acres of vine land in full bearing will support a family comfortably. The product is from three to six tons per acre, being rather as to quality than quantity. The prices per ton for the common varieties range from \$12 to \$20, and for the higher grades of Bordeaux and Sauterne from \$40 to \$50. Estimating at these figures, a vineyard in full bearing will net from \$100 to \$200 per acre. No irrigation is necessary in this district even in the driest seasons, as moist soil is found within four inches of the surface after a lapse of five months after the last spring rains. It is claimed that no variety of wine, raisin, or table grape now grown in the Livermore Valley can be produced in any part of the United States east of the Rocky Mountains.

The growth of grapes and production of wine is only one of the industries of this township. A few years after the setting out of the first vineyards, A. T. Hatch, a large fruit grower of Solano County, made an examination of the soil and the climatic conditions, and, being satisfied of the adaptability of both to the production of certain varieties, purchased several hundred acres of land in the Livermore Valley. He, in conjunction with several other gentlemen, planted several hundred acres of almonds, and the remainder in French prunes, Bartlett pears, and other fruits. These are now in bearing and produce well.

A peach orchard on the Cresta Blanca ranch of C. A. Wetmore, of seven acres, in the fifth year after planting, produced forty-two tons of fruit, and the brand of Chateau Yquem wine (Sauterne) from the same farm took the gold medal at the Paris Exposition of 1889, the judges being unable to detect any difference between it and the best French wine of the same brand. It was also awarded the premium at the recent Mechanics' Institute Fair.

Apricots and prunes in this township also produce well and it is a question whether or not they may not prove as acceptable and profitable a crop as the high type wine grapes, for the reason that there is less delay in receiving returns and less output necessary in marketing them.

The principal towns in the township are Livermore and Pleasanton. The former is an incorporated town and has gained in population three to four hundred per cent in the past ten years, and its taxable property has increased in value from \$250,500 in 1882 to \$620,000 in 1893. It has a sprightly newspaper, the various religious and fraternal societies, etc. At Pleasanton is the stock farm of the late Count Giulio Valensin, where several famous racing horses were raised and

trained. The hops grown in and around Pleasanton are the finest grown on the coast.

The total valuation of the two hundred and thirty-three thousand seven hundred and forty-five acres in this township in 1882 was \$3,163,965; in 1892 it was \$6,189,670.

There are to be found in the township coal, magnesite, manganese, manganite, chrome and mineral paint, but they have not as yet been developed. A shaft has been sunk for a coal mine, though the taking coal in any quantities has not yet been carried out by the owner. Crude oil has also been found, and indications of petroleum oil and natural gas were discovered recently, and there is an intention of organizing a company to prosecute the search for natural gas so as to supply another illuminating and heat product for Oakland and San Francisco. The nearest natural gas so far in use is across the Contra Costa Range at Stockton, in San Joaquin County.

CHAPTER XI.

WASHINGTON TOWNSHIP.

Its Location, Products—Agricultural, Horticultural, Viticultural—Natural Advantages, etc.

The township of Washington is in the southwestern corner of the county. It is the second in size in the county, containing an area of eighty-eight thousand eight hundred and thirty-eight acres, and is about twelve miles wide by thirteen in length. It is a level alluvial plain, bounded westerly by the shore of San Francisco Bay, on the east by the foothills; on the westerly border are salt marshes, embracing many acres, but many of these marshy tracts are gradually filling up and are only overflowed by the highest tides, while others would require only a small dyke to be secure at all times from tidal overflow. There are now between thirty thousand and thirty-five thousand acres of this marsh land. A great portion of this can be reclaimed. About thirty thousand acres of the remaining land is under cultivation.

In this township was the original settlement of the mission fathers years ago, and the cultivation of the soil at Mission San Jose. It is increasing year by year in valuation. In 1882 the total valuation of the entire township was \$4,175,402. This has increased in the ten years to \$5,289,999, or upward of \$100,000 per year.

One remarkable thing in this township is a belt about three miles broad by twelve long where there are no frosts during the coldest winters. This is true of no other part of the county. There is very little

frost anywhere in the county, but in the section mentioned there is none, and the orange, lemon, olive, magnolia, camellia and other semi-tropical fruits and flowers grow out-of-doors. The old Mission of San Jose, where the Spanish missions were first established, is in this township and in this warm belt. It begins at about two hundred feet altitude and its bounds are very plainly defined. It extends a little way into the valley and back upon the foothills. The choicest vineyards and orchards at Niles are in this favored belt, where almonds bear as in only a few other spots in the State, and where oranges, lemons, the date palm, bananas and other semi-tropic growths are to be seen. From Niles along the foothills to Mission San Jose and Warm Springs the climate is much the same. At points there is more wind; some are more sheltered; some appreciably warmer than others, but, all in all, this thermal belt of southern Alameda County will safely bear comparison with the best portions of counties much further south.

The alluvium of this township is broader in extent and of greater depth than anywhere else about the bay. It is, in general, a rich black loam, which is found to rest upon a substratum of gravel and sand at a depth of from six to thirty feet, which latter depth is found at Niles. From the presence of this layer of gravel a natural system of subsoil drainage is maintained of such excellence that the soil may be turned up from any depth and yet be found always moist without being saturated. As the ascent is made toward the foothills, the alluvium is gradually left behind, and in its place is found a soil lighter in color, somewhat gravelly and dry, but in the main fertile, and especially valuable for fruits. Across the northern portion of the township runs the Alameda Creek. Its eastern boundary is found in the bed of the Calaveras Creek. These, with a number of sloughs upon the bay shore, the well-known Mission Creek, the several more or less permanent brooks of the mountains, are the water courses of the township. This township justly claims among its valued achievements the possession of a fruit belt of unusual extent, variety and value, the first establishment on a paying basis of the sugar beet industry of California, which has grown into one of our most valuable industries, and the possession of a famous wine district, second to none in the State. Nurseries among the largest in California have been established on Alameda Creek, near Niles. In a few years Niles, Decoto, Centerville and the Mission San Jose will be known as among the heaviest shippers of deciduous fruits, table grapes, wines, nuts, dried and canned fruits. The whole region, for miles, is destined to become one

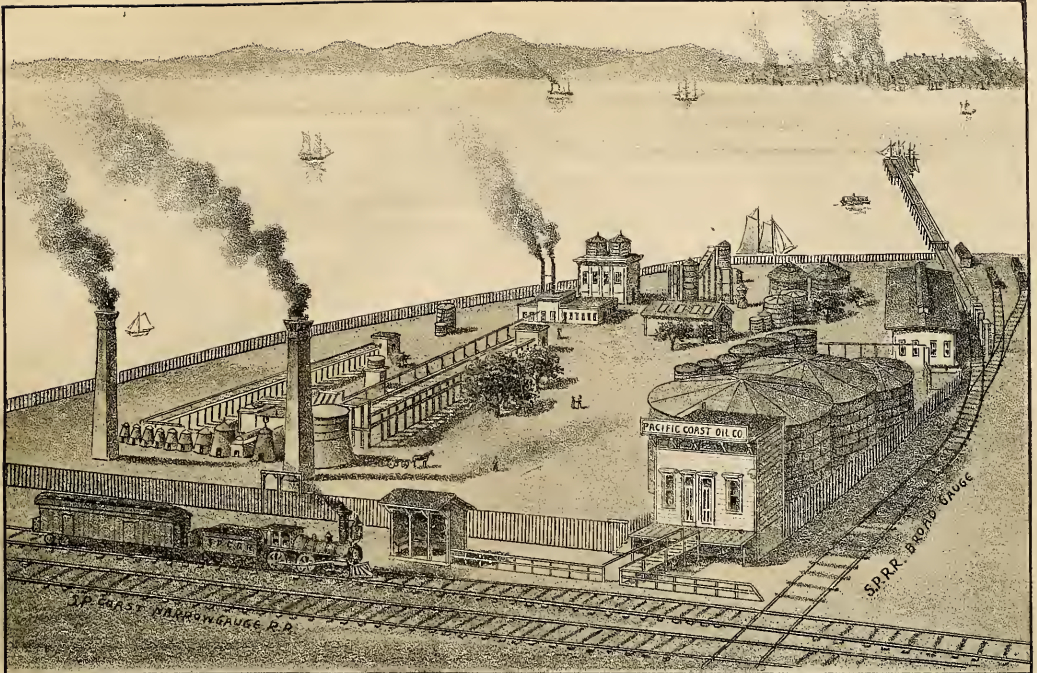
vast orchard, and the hill slopes one continuous vineyard.

The wine industry of Washington Township, great as it is, has only just made a fair beginning, and yet the assessment roll of the township shows one hundred acres in table grapes and raisins, and two thousand two hundred acres in wine grapes, each acre yielding from two to seven tons of grapes. It has been estimated by careful observers that this one township has two million one hundred and fifty-five thousand vines, producing about four hundred thousand gallons of wine each year. The chief vineyardists and wine makers in this, one of the richest wine districts of California, are Josiah Stanford and John L. Beard at the Warm Springs, and Juan Gallegos and Chas. C. McIvor at the Mission San Jose.

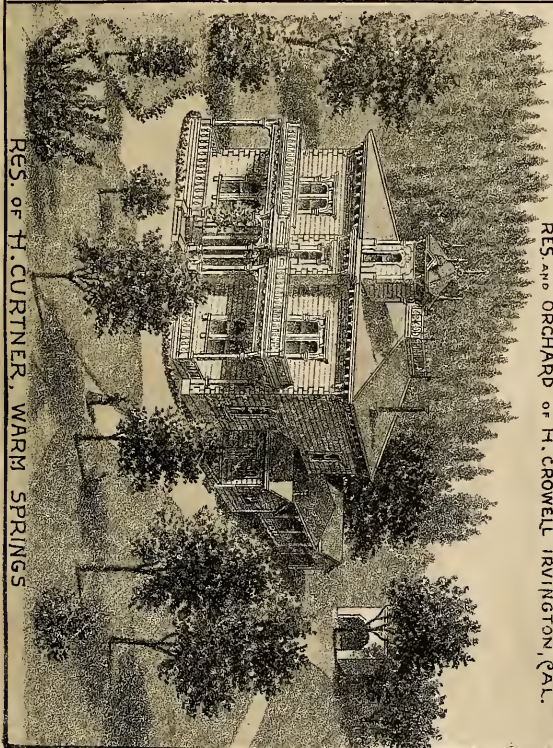
Warm Springs was at one time a noted sanitarium, but, with a change in the ownership of the property, it was diverted to other uses. Yet if at any time it should be deemed advisable by the present owner of the property to develop its resources in this direction, there will not be found a place in the country which could offer superior advantages. Situated in the heart of the strange thermal belt, with its equable climate, and abundantly supplied with invigorating and tonic mineral waters, it might be made a very Californian Ems.

One of the chief evidences of the value of Washington Township fruit lands is the disinclination of the owners to part with them. Very little land is for sale in the region, and yet it is being improved and is mostly in small holdings already. Washington Township has also a large acreage in vegetable land, along the creeks and bay, second in quality to none in the State. On the warm hills land, rated only a few years ago as cheap pasture land, worth only \$20 per acre, rents for over half that per year for early vegetables, such as peas and potatoes. The line of cultivation is rapidly extending into the foothills, and another generation will discover that of the more than thirty thousand acres now rated as untillable, hardly ten thousand are really so. Another extension of the line is toward the marshes. Reclamation plans now under way will soon bring into cultivation thousands of acres of boundless fertility, now subject to tidal overflow.

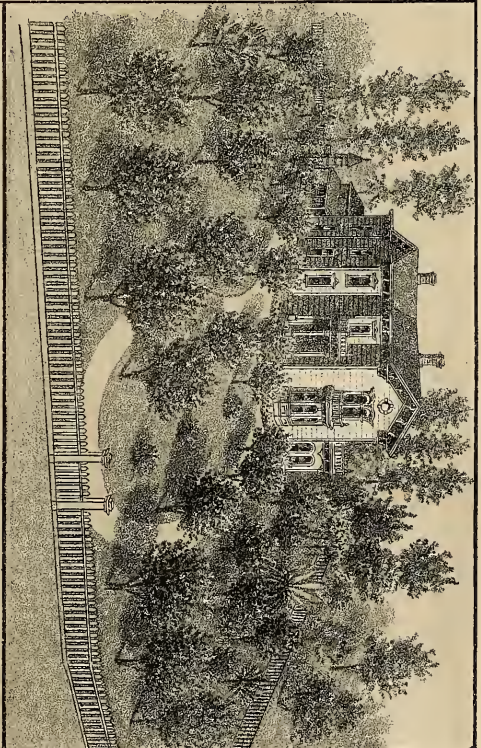
The township is traversed by two railways, both under control of the Southern Pacific Company. The narrow-gauge road skirts the marshes and passes through the western part of the township. The broad gauge skirts the hills some miles to the eastward. The principal villages on the line of the narrow-gauge railroad are Alvarado, the former county seat, and Newark, where are the shops of the Southern Pacific



PACIFIC COAST OIL COMPANY'S REFINERY, ALAMEDA POINT, CALA. GEN. OFFICE, 13 PINE ST., SAN FRANCISCO.



RES. AND ORCHARD of H. CROWELL IRVINGTON, CAL.





Coast Railroad. Decoto, Niles, and Irvington are the most considerable places upon the broad-gauge road. Centerville and the Mission San Jose are the centers of much trade, and are thriving towns, though not upon any railroad line.

At Irvington, in this township, is the immense winery erected some years ago by Juan Gallegós. In this vicinity, and that of Mission San Jose, are a few orange orchards, where as fine navel oranges and seedlings are grown as anywhere else in the State, not ex-

cepting the southern part or the northern citrus belt. In the vicinity of Niles the same is true, and at this point also are grown fine cherries and all the various varieties of almonds to perfection. A great deal of fruit from the lower end of this township and from about Niles goes each season to the canneries and drying establishments at San Jose. Considerable quantities of fruit are sun dried in this vicinity, and it is a fact that about three hundred tons of dried fruit were shipped from Niles during the season of 1893.



Description of Illustrations.

Below is an explanation of the scenes represented by plates, not mentioned in general matter.

Plate No. 2.—Situated upon the shore of Lake Merritt, stands the residence and beautiful surroundings of M. W. Murry. The house was built several years ago, before the influx of modern architecture with its many fanciful designs was inaugurated. The buildings are very substantially constructed of wood. The finest of the woodwork inside the house is of solid black walnut. The walls and ceilings of the house and billiard room are beautifully and richly frescoed. The grounds contain many of the choicest trees and flowers; a large and artistic fountain stands in the yard; in other parts of the grounds stand many pieces of artistic statuary, making one of the most attractive homes in the city.

Plate No. 3.—Represents Ruby Hill vineyard. Ruby Hill is an estate consisting of four hundred fifty acres situated in the most favored part of the celebrated Livermore Valley, forty miles from San Francisco. It is the property of J. Crellin & Sons, and was especially selected as a site for a vineyard to be devoted to the highest qualities of French wine types,—Sauternes, Medocs, and Burgundies. Two hundred and fifty acres are now in full bearing, all of which are of the choicest imported varieties. A large and complete winery and distillery is in full operation, where the choicest wines and brandies of three vintages are maturing continually.

The situation of this property is one of the most picturesque, and the quality of the soil, being gravelly alluvium from cretaceous and calcareous hills, is a guaranty of the high promise of future vintages.

The following wines can be obtained in glass or bulk: Haut Sauterne, Sauterne, Riesling, Burger, Cabernet, Burgundy, Zinfandel, and brandy.

Post office address, J. Crellin & Sons, Pleasanton, California.

Plate No. 4.—Represents the home of Ex-Governor Geo. C. Perkins, one of the representative men of California, who is agent and owner in company (Goodall, Perkins & Co.) of several lines of steamships, running from San Francisco to Los Angeles, San Diego, and Mexico, up the coast to Oregon and Washington, also to Alaska.

This residence is beautifully located on "Vernon Heights," elevated sufficiently to give a fine view of the bay and surrounding scenery. It is on the line of Piedmont Cable Railroad, fronting south on Oakland Avenue, occupying the entire frontage of the block from Vernon Avenue to Orange Street. North one-half block the outside of the grounds along the walks are planted Australian palms, inside the grounds by the walks and drives and on the lawn and flower gardens are various kinds of trees and flowers, including the fan palms, pampas grass in dress plumes, which resemble large white feathers. On the right of the residence is a large and ornamental conservatory, filled with the choicest of flowers and plants.

The residence itself is of modern architecture, ornamental as well as substantially built.

Plate No. 5.—Near the village of San Leandro is the home of F. S. Hastings, only six acres, but on this small farm there is a richness and variety of fruit that is delightful to behold. The house and outbuildings are built of wood. The house is square, rather ornamental, and contains a large, cool basement. In front, along the road, is a row of large pepper trees.

Plate No. 6.—Situated right in the heart of the city of Oakland, at Twenty-fifth Street and Telegraph Avenue, is the palatial home of J. M. Merrell. The grounds occupy one block on Telegraph Avenue, from Twenty-fifth to Twenty-sixth Street, west about six hundred feet. The residence itself is a very ornamental piece of architecture of wood, is large, roomy, and spacious, with verandas, conservatory, etc. The grounds are among the largest of city gardens, and are set with all the different varieties of trees, plants, and flowers, peculiar to this and foreign climates. Upon three sides of these spacious grounds is a substantial iron fence, which adds greatly to the general appearance of the place. Outside the grounds and walks are trees, and, although they are quite shady and conspicuous, they are only three years old. While this picture gives a good idea of the house, grounds, walks, etc., it embraces a good deal more. Upon the adjoining block all of the buildings are represented. Back of these in a general way is seen a good portion of the city of Oakland. Still further in the background is seen the bay and city of San Francisco, and the Golden Gate entrance to the harbor, also several islands in the bay. To the right in the distance are the hills of Marin County; the highest point is Mt. Tamalpais.

Plate No. 7.—On East Oakland Heights, looking toward Oakland and San Francisco, are the home and beautiful grounds of Hon. H. G. Blasdel. Mr. Blasdel has been a resident of California several years, but in the early history of the State of Nevada he was twice elected governor of that State. It is on the line of the Twenty-third Avenue electric railroad. The grounds are elevated, and from all points, especially from the second story of the residence, is a fine view of the bay looking west, and also of the hills and valley to the south and east. The residence is a large square frame building, relieved with commodious verandas, bay windows, etc. It is two stories above the basement, finished with all modern improvements, making a most attractive and beautiful home. The picture not only shows the land comprising the homestead, but considerable more. Surrounding this are a large number of lots that are most desirable for residences, being situated so near rapid transit railroads. They are for sale on very easy terms.

Plate No. 8.—Represents Edwin Whipple's residence.

RESIDENCE OF JOHN C. WHIPPLE, ESQ.

Plate No. 9.—The residence of J. C. Whipple is situated on his farm of 400 acres in Washington Township, one mile from the town of Decoto. Mr. Whipple's farm and the land in the vicinity are among

the finest in the county, the soil being very rich, yielding forty bushels of barley to the acre. It will also produce fifteen tons of sugar beets per acre. The land in this locality is valued at three hundred dollars per acre and pays a profit of three per cent on the investment. Mr. Whipple has a herd of fifty short-horn Durham cattle, also a large number of work and stock horses. He is also interested, with his brother, Edwin Whipple, in several hundred acres of land about a mile distant. He is a pioneer Californian, coming to the State early in the 50's. He is well known throughout the county and State.

Plate No. 10.—Is a view, looking east, of Castro Valley, which is known as a very fertile section of Alameda County. This valley is so sheltered by surrounding hills that tropical fruits are grown here successfully. Some of the finest lemons and oranges produced here are the best specimens the county affords. The foreground of the plate represents the home of J. H. Strobbridge, situated in Eden Township, about one and one-half miles east of the town of Hayward, known as the Laurel Ranch. The farm consists of two hundred twenty acres. Mr. Strobbridge also has some very fine blooded horses and gives considerable attention to stock raising.

Plate No. 12.—Represents the orchards of E. S. Denison, situated at Niles. The upper view is an almond orchard of 20 acres; the trees are all young, but a good many are bearing fruit. The other view shows an orchard of a variety of fruit trees consisting of cherries, apricots, pears, peaches, plums, apples, etc.; it contains about 15 acres. Although these orchards are not very extensive, the fruit is of a choice variety and yields very abundantly, nestling under the foothills at Niles, making a variety of scenery in mountain and valley that is delightful to look upon. Mr. Denison resides in Oakland. He makes fruit raising a part of his otherwise busy life.

Plate No. 14.—Represents the home of Charles Nelson. This beautiful spot is situated about two miles east of Oakland on Seminary Avenue. This avenue runs from the county road to Mills Seminary. It is near the hills, and in fact a part of the grounds are a little rolling. From the entrance along the driveway to the house on both sides of the way are planted some Monterey cypress trees. As will be observed by the picture, they resemble square blocks. This is the way the trees are trimmed and is purely a matter of taste. These indeciduous trees can be cut into most any shape or design desired. The grounds also contain choice fruit and ornamental trees.

Plate No. 23.—It has been the earnest desire of the promoter of the Olivina, to produce delicate table

wines, of a character of excellence to compare favorably with the renowned vintages of Europe. How far the planting of foreign vines and researches in the vinelands of Europe, supplemented with fine formations of soil and a perfect climate, with the generous sunshine during the ripening period, have contributed to this attainment, can best be determined by a study of the several types of the Olivina vintages. These vines will be listed at the Viticultural Restaurant and Café, in the California State Building in the Columbian Exposition.

The Olivina Pavilion will be located in the Wine Department of the Horticultural Hall, where connoisseurs, interested parties, and the trade generally, are requested to introduce themselves and test the qualities of the Olivina wines and brandies.

Plate No. 26.—Represents the home and vineyard of James Concannon. This place is situated one and one-half miles southeast from the town of Livermore, in Livermore Valley. The farm contains 47 acres, mostly in vines. The kinds of grapes raised are Corignan, Matars, Grenache, Zinfandel, Burger, Folle, and Reanche. A few acres only are devoted to other fruits.

The average yield of grapes is about three and one-half tons per acre. Mr. Concannon manufactures wine from his and others' grapes to the amount of fifty to sixty thousand gallons annually. His wines being of excellent quality, he supplies a great deal to the local retail trade, as well as to the wholesale. Mr. Concannon commenced here nine years ago, and, with care and enterprise, he has built up a large trade in grape cuttings. Four years ago his first crop of cuttings amounted to one hundred thousand. Now he sells one million annually, mostly to Mexico. The residence is a snug cottage with a good-sized wine cellar.

Plate No. 26.—In the beautiful city of Alameda, which is situated near Oakland, is the home of E. L. Scheffelin. It is on Central Avenue. It is one of many beautiful places in this city of homes. There are larger and more imposing buildings than this one, but it is of modern architecture, two stories, frame, finished complete, and contains all that makes a home substantial as well as ornamental. The grounds are nicely laid out with cement walks and bordered with all the choicest plants and trees that abound in this semi-tropical climate.

Plate No. 27.—Situated near the village of Niles is the country residence of Loring Pickering, as the picture represents, a very comfortable two-story frame building with outbuildings. The grounds are tastefully laid out with a variety of flowers and many of

the trees peculiar to this climate. In the rear is a large orchard of fruit trees, vineyards, etc. Mr. Pickering is an old citizen and representative man of California, and has long been identified with and engaged in journalism, being editor and publisher of the *San Francisco Call*. Together with his family he spends the summer months in this rural home, returning to his palatial home in San Francisco for the winter.

RESIDENCE AND FARM OF JAMES SHINN, ESQ.

Plate No. 27.—This farm, near Niles, Washington Township, is mainly a rich alluvial soil, made by the deposits from the Alameda Creek, and is what is usually described as sandy loam. This soil is of the type of the best fruit and vegetable lands of California, and is justly famed for its ease of cultivation and its remarkable richness in all the elements that are needed for plant growth. In fact, all of this land has been in cultivation for about forty years, and while it does not, of course, produce in the prodigal abundance that it did when it was virgin soil, it still does, without fertilizing or much change of crops, produce in such large quantities that, should I give them, people who are not used to California soils would not believe.

There are over ten thousand fruit trees on the ranch, principally cherry, apricot, peach, almond, pear, apple, prune, orange, walnut, in about the order named. There are also a few trees of the following varieties,—lemon, filbert, fig, olive, and pecan, of the latter of which there is a very fine avenue of trees fifty to seventy-five feet high, though only fifteen years old. There are a few carob trees in bearing, which produce the "husks" that the "prodigal son" is said to have lived upon while feeding the swine. Then there are the pistachionut trees, which bear the nuts from which the "green" ice cream is flavored. There are jujube shrubs, loquats, date palms, fan palms, shaddock, honey locust and many other kinds of fruit and shade trees and ornamental shrubs.

To Eastern people, and those who do not know any climate except that near the coast, one of the most interesting things of the region in and about Niles is its climate. While only thirty miles from San Francisco and the ocean coast, it is so mild and warm that citrus fruits, and, as a matter of fact, all fruits and plants that are not strictly tropical, can be grown to perfection. Indeed, some winters are so mild that there are hardly any nights cold enough for even white frosts, while the summers are seldom uncomfortably warm.

Plate No. 28.—In the little village of Irvington there is one ideal residence and grounds, though small. It contains some very handsome ornaments. It is the home of H. Crowell. The trees here represent an

orange grove of good-sized bearing trees. It is not common to find in Alameda County many orange orchards so thrifty as this one is. In fact, they are not very plentiful in the county. It shows what can be raised in this warm valley, with proper cultivation. The residence is a two-story frame building, modern in architecture, and a beautiful home.

Plate No. 28.—Represents the residence of H. Curtner. This homestead is situated at Warm Springs. The ranch consists of three thousand acres, and pro-

duces a variety of crops, consisting of barley, hay, potatoes, fruit, etc. Barley yields forty bushels per acre, hay, two tons per acre. Thirty thousand sacks of potatoes were raised last year, 1892. From ten to fifteen thousand sacks of early peas are raised annually. Almonds and other nuts and peaches are the principal products of the farm aside from the home buildings, surrounded on all sides with fruit and ornamental trees. There are good and substantial outbuildings necessary for farm purposes.

